

Appendix B
Coastal Management Program Assessment

NEW YORK CITY WATERFRONT REVITALIZATION PROGRAM Consistency Assessment Form

Proposed actions that are subject to CEQR, ULURP or other local, state or federal discretionary review procedures, and that are within New York City's Coastal Zone, must be reviewed and assessed for their consistency with the [New York City Waterfront Revitalization Program](#) (WRP) which has been approved as part of the State's Coastal Management Program.

This form is intended to assist an applicant in certifying that the proposed activity is consistent with the WRP. It should be completed when the local, state, or federal application is prepared. The completed form and accompanying information will be used by the New York State Department of State, the New York City Department of City Planning, or other city or state agencies in their review of the applicant's certification of consistency.

A. APPLICANT INFORMATION

Name of Applicant: Governor's Office of Storm Recovery (GOSR)

Name of Applicant Representative: Daniel Greene, General Counsel and Certifying Officer, GOSR

Address: 25 Beaver Street, New York, NY 10004

Telephone: (212)480-4644 Email: Daniel.Greene@stormrecovery.ny.gov

Project site owner (if different than above): NYC Department of Parks and Recreation

B. PROPOSED ACTIVITY

If more space is needed, include as an attachment.

I. Brief description of activity

The Proposed Actions comprise implementation of resiliency initiatives intended to work in tandem to enhance coastal and social resiliency along the Tottenville shoreline of the South Shore of Staten Island, NY. These initiatives include the Living Breakwaters Project (Breakwaters Project) and Tottenville Shoreline Protection Project (Shoreline Project). The Breakwaters Project would consist of ecologically enhanced breakwater segments occupying approximately 12.7 acres of sand/gravel habitat of Raritan Bay located between 500 and 2,100 feet offshore in waters approximately 2 to 10 feet deep at mean low water. The Breakwaters Project would reduce wave energy at the shoreline; reduce/reverse shoreline erosion; increase habitat diversity through provision of complex subtidal, intertidal, and emergent rocky structure elements; and promote social resilience through educational and community programs proposed at a Water Hub. The Shoreline Project would provide on-shore resiliency measures that would augment the wave attenuation and risk reduction potential provided by the Breakwaters Project. It includes a series of shoreline protection measures extending along the Tottenville shoreline largely within New York City Department of Parks and Recreation (NYC Parks) Conference House Park from approximately west of the intersection of Swinnerton Street and Billop Avenue to Page Avenue, including: an earthen berm, eco-revetment, hybrid dune system, and raised edge (trail with a revetment), along with wetland enhancement and landscaping with coastal vegetation. Three ADA accessible access points and overlooks would be constructed along the shoreline protection system. Portions of the Breakwaters Project and Shoreline Project would be located within the 100-year floodplain and New York State Coastal Erosion Hazard Area.

2. Purpose of activity

The purpose of the Layered Strategy is to reduce wave energy and reduce/reverse coastal erosion along the shoreline in Tottenville while enhancing ecosystems and shoreline access and use. The specific goals and objectives of the Proposed Actions are: (1) Risk Reduction, via attenuation of wave energy, minimization of both event-based and long-term shoreline erosion, preservation of beach width, and addressing the impacts of coastal flooding; (2) Ecological Enhancement, by increasing the diversity of aquatic habitats consistent with Hudson-Raritan Estuary Plan priorities (e.g., fish and shellfish habitat, oyster reefs); and (3) Social Resiliency, by fostering community education on coastal resiliency directly tied to and building off the structural components of this initiative, increasing physical and visual access to the water's edge, enhancing community stewardship of on-shore and in-water ecosystems, and increasing access to recreational opportunities

C. PROJECT LOCATION

Borough: Staten Island Tax Block/Lot(s): 7857-1, 150, 200 7722-1

Street Address: Tottenville shoreline of the south shore of Staten Island

Name of water body (if located on the waterfront): Raritan Bay

D. REQUIRED ACTIONS OR APPROVALS

Check all that apply.

City Actions/Approvals/Funding

City Planning Commission Yes No

<input type="checkbox"/> City Map Amendment	<input type="checkbox"/> Zoning Certification	<input type="checkbox"/> Concession
<input type="checkbox"/> Zoning Map Amendment	<input type="checkbox"/> Zoning Authorizations	<input type="checkbox"/> UDAAP
<input type="checkbox"/> Zoning Text Amendment	<input type="checkbox"/> Acquisition – Real Property	<input type="checkbox"/> Revocable Consent
<input type="checkbox"/> Site Selection – Public Facility	<input type="checkbox"/> Disposition – Real Property	<input type="checkbox"/> Franchise
<input type="checkbox"/> Housing Plan & Project	<input type="checkbox"/> Other, explain: _____	
<input type="checkbox"/> Special Permit		

(if appropriate, specify type: Modification Renewal other) Expiration Date: _____

Board of Standards and Appeals Yes No

<input type="checkbox"/> Variance (use)	
<input type="checkbox"/> Variance (bulk)	
<input type="checkbox"/> Special Permit	

(if appropriate, specify type: Modification Renewal other) Expiration Date: _____

Other City Approvals

<input type="checkbox"/> Legislation	<input type="checkbox"/> Funding for Construction, specify: _____
<input type="checkbox"/> Rulemaking	<input type="checkbox"/> Policy or Plan, specify: _____
<input type="checkbox"/> Construction of Public Facilities	<input type="checkbox"/> Funding of Program, specify: _____
<input type="checkbox"/> 384 (b) (4) Approval	<input type="checkbox"/> Permits, specify: _____
<input type="checkbox"/> Other, explain: _____	

State Actions/Approvals/Funding

State permit or license, specify Agency: NYSDEC Permit type and number: Articles 15, 25, and 34 of ECL

Funding for Construction, specify: _____

Funding of a Program, specify: _____

Other, explain: _____

Federal Actions/Approvals/Funding

Federal permit or license, specify Agency: USACE Permit type and number: Section 404 and Section 10

Funding for Construction, specify: US Department of Housing and Urban Development CDBG-DR

Funding of a Program, specify: _____

Other, explain: _____

Is this being reviewed in conjunction with a [Joint Application for Permits?](#) Yes No

E. LOCATION QUESTIONS

1. Does the project require a waterfront site? Yes No
2. Would the action result in a physical alteration to a waterfront site, including land along the shoreline, land under water or coastal waters? Yes No
3. Is the project located on publicly owned land or receiving public assistance? Yes No
4. Is the project located within a FEMA 1% annual chance floodplain? (6.2) Yes No
5. Is the project located within a FEMA 0.2% annual chance floodplain? (6.2) Yes No
6. Is the project located adjacent to or within a special area designation? See [Maps – Part III](#) of the NYC WRP. If so, check appropriate boxes below and evaluate policies noted in parentheses as part of WRP Policy Assessment (Section F).
 - Significant Maritime and Industrial Area (SMIA) (2.1)
 - Special Natural Waterfront Area (SNWA) (4.1)
 - Priority Martine Activity Zone (PMAZ) (3.5)
 - Recognized Ecological Complex (REC) (4.4)
 - West Shore Ecologically Sensitive Maritime and Industrial Area (ESMIA) (2.2, 4.2)

F. WRP POLICY ASSESSMENT

Review the project or action for consistency with the WRP policies. For each policy, check Promote, Hinder or Not Applicable (N/A). For more information about consistency review process and determination, see **Part I** of the [NYC Waterfront Revitalization Program](#). When assessing each policy, review the full policy language, including all sub-policies, contained within **Part II** of the WRP. The relevance of each applicable policy may vary depending upon the project type and where it is located (i.e. if it is located within one of the special area designations).

For those policies checked Promote or Hinder, provide a written statement on a separate page that assesses the effects of the proposed activity on the relevant policies or standards. If the project or action promotes a policy, explain how the action would be consistent with the goals of the policy. If it hinders a policy, consideration should be given toward any practical means of altering or modifying the project to eliminate the hindrance. Policies that would be advanced by the project should be balanced against those that would be hindered by the project. If reasonable modifications to eliminate the hindrance are not possible, consideration should be given as to whether the hindrance is of such a degree as to be substantial, and if so, those adverse effects should be mitigated to the extent practicable.

		Promote	Hinder	N/A
I	Support and facilitate commercial and residential redevelopment in areas well-suited to such development.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
I.1	Encourage commercial and residential redevelopment in appropriate Coastal Zone areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
I.2	Encourage non-industrial development with uses and design features that enliven the waterfront and attract the public.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
I.3	Encourage redevelopment in the Coastal Zone where public facilities and infrastructure are adequate or will be developed.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
I.4	In areas adjacent to SMIA's, ensure new residential development maximizes compatibility with existing adjacent maritime and industrial uses.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
I.5	Integrate consideration of climate change and sea level rise into the planning and design of waterfront residential and commercial development, pursuant to WRP Policy 6.2.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

		Promote	Hinder	N/A
2	Support water-dependent and industrial uses in New York City coastal areas that are well-suited to their continued operation.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.1	Promote water-dependent and industrial uses in Significant Maritime and Industrial Areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.2	Encourage a compatible relationship between working waterfront uses, upland development and natural resources within the Ecologically Sensitive Maritime and Industrial Area.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.3	Encourage working waterfront uses at appropriate sites outside the Significant Maritime and Industrial Areas or Ecologically Sensitive Maritime Industrial Area.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.4	Provide infrastructure improvements necessary to support working waterfront uses.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.5	Incorporate consideration of climate change and sea level rise into the planning and design of waterfront industrial development and infrastructure, pursuant to WRP Policy 6.2.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3	Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.1.	Support and encourage in-water recreational activities in suitable locations.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2	Support and encourage recreational, educational and commercial boating in New York City's maritime centers.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.3	Minimize conflicts between recreational boating and commercial ship operations.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3.4	Minimize impact of commercial and recreational boating activities on the aquatic environment and surrounding land and water uses.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.5	In Priority Marine Activity Zones, support the ongoing maintenance of maritime infrastructure for water-dependent uses.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4	Protect and restore the quality and function of ecological systems within the New York City coastal area.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.1	Protect and restore the ecological quality and component habitats and resources within the Special Natural Waterfront Areas.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.2	Protect and restore the ecological quality and component habitats and resources within the Ecologically Sensitive Maritime and Industrial Area.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.3	Protect designated Significant Coastal Fish and Wildlife Habitats.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.4	Identify, remediate and restore ecological functions within Recognized Ecological Complexes.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.5	Protect and restore tidal and freshwater wetlands.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.6	In addition to wetlands, seek opportunities to create a mosaic of habitats with high ecological value and function that provide environmental and societal benefits. Restoration should strive to incorporate multiple habitat characteristics to achieve the greatest ecological benefit at a single location.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.7	Protect vulnerable plant, fish and wildlife species, and rare ecological communities. Design and develop land and water uses to maximize their integration or compatibility with the identified ecological community.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.8	Maintain and protect living aquatic resources.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		Promote	Hinder	N/A
5	Protect and improve water quality in the New York City coastal area.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.1	Manage direct or indirect discharges to waterbodies.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.2	Protect the quality of New York City's waters by managing activities that generate nonpoint source pollution.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.3	Protect water quality when excavating or placing fill in navigable waters and in or near marshes, estuaries, tidal marshes, and wetlands.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.4	Protect the quality and quantity of groundwater, streams, and the sources of water for wetlands.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.5	Protect and improve water quality through cost-effective grey-infrastructure and in-water ecological strategies.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Minimize loss of life, structures, infrastructure, and natural resources caused by flooding and erosion, and increase resilience to future conditions created by climate change.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.1	Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the site, the use of the property to be protected, and the surrounding area.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.2	Integrate consideration of the latest New York City projections of climate change and sea level rise (as published in <i>New York City Panel on Climate Change 2015 Report, Chapter 2: Sea Level Rise and Coastal Storms</i>) into the planning and design of projects in the city's Coastal Zone.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.3	Direct public funding for flood prevention or erosion control measures to those locations where the investment will yield significant public benefit.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.4	Protect and preserve non-renewable sources of sand for beach nourishment.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	Minimize environmental degradation and negative impacts on public health from solid waste, toxic pollutants, hazardous materials, and industrial materials that may pose risks to the environment and public health and safety.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.1	Manage solid waste material, hazardous wastes, toxic pollutants, substances hazardous to the environment, and the unenclosed storage of industrial materials to protect public health, control pollution and prevent degradation of coastal ecosystems.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7.2	Prevent and remediate discharge of petroleum products.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7.3	Transport solid waste and hazardous materials and site solid and hazardous waste facilities in a manner that minimizes potential degradation of coastal resources.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	Provide public access to, from, and along New York City's coastal waters.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.1	Preserve, protect, maintain, and enhance physical, visual and recreational access to the waterfront.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.2	Incorporate public access into new public and private development where compatible with proposed land use and coastal location.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.3	Provide visual access to the waterfront where physically practical.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.4	Preserve and develop waterfront open space and recreation on publicly owned land at suitable locations.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		Promote	Hinder	N/A
8.5	Preserve the public interest in and use of lands and waters held in public trust by the State and City.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8.6	Design waterfront public spaces to encourage the waterfront's identity and encourage stewardship.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Protect scenic resources that contribute to the visual quality of the New York City coastal area.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.1	Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9.2	Protect and enhance scenic values associated with natural resources.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	Protect, preserve, and enhance resources significant to the historical, archaeological, architectural, and cultural legacy of the New York City coastal area.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.1	Retain and preserve historic resources, and enhance resources significant to the coastal culture of New York City.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10.2	Protect and preserve archaeological resources and artifacts.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

G. CERTIFICATION

The applicant or agent must certify that the proposed activity is consistent with New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program. If this certification cannot be made, the proposed activity shall not be undertaken. If this certification can be made, complete this Section.

"The proposed activity complies with New York State's approved Coastal Management Program as expressed in New York City's approved Local Waterfront Revitalization Program, pursuant to New York State's Coastal Management Program, and will be conducted in a manner consistent with such program."

Applicant/Agent's Name: Daniel Greene, New York State Governor's Office of Storm Recovery

Address: 25 Beaver Street, New York, NY 10004

Telephone: (212)480-4644 Email: Daniel.Greene@stormrecovery.ny.gov

Applicant/Agent's Signature: 

Date: 3-15-2017

Submission Requirements

For all actions requiring City Planning Commission approval, materials should be submitted to the Department of City Planning.

For local actions not requiring City Planning Commission review, the applicant or agent shall submit materials to the Lead Agency responsible for environmental review. A copy should also be sent to the Department of City Planning.

For State actions or funding, the Lead Agency responsible for environmental review should transmit its WRP consistency assessment to the Department of City Planning.

For Federal direct actions, funding, or permits applications, including Joint Applicants for Permits, the applicant or agent shall also submit a copy of this completed form along with his/her application to the [NYS Department of State Office of Planning and Development](#) and other relevant state and federal agencies. A copy of the application should be provided to the NYC Department of City Planning.

The Department of City Planning is also available for consultation and advisement regarding WRP consistency procedural matters.

New York City Department of City Planning

Waterfront and Open Space Division
120 Broadway, 31st Floor
New York, New York 10271
212-720-3525
wrp@planning.nyc.gov
www.nyc.gov/wrp

New York State Department of State

Office of Planning and Development
Suite 1010
One Commerce Place, 99 Washington Avenue
Albany, New York 12231-0001
(518) 474-6000
www.dos.ny.gov/opd/programs/consistency

Applicant Checklist

- Copy of original signed NYC Consistency Assessment Form
- Attachment with consistency assessment statements for all relevant policies
- For Joint Applications for Permits, one (1) copy of the complete application package
- Environmental Review documents
- Drawings (plans, sections, elevations), surveys, photographs, maps, or other information or materials which would support the certification of consistency and are not included in other documents submitted. All drawings should be clearly labeled and at a scale that is legible.

A. NEW YORK STATE COASTAL MANAGEMENT PROGRAM

The federal Coastal Zone Management Act (CZMA) of 1972 was enacted to support and protect the distinctive character of the waterfront and to set forth standard policies for reviewing proposed development projects along coastlines. The program responded to City, State, and federal concerns about the deterioration and inappropriate use of the waterfront. The CZMA emphasizes the primacy of State decision-making regarding the coastal zone. In accordance with the CZMA, New York State adopted its own Coastal Management Program (CMP), designed to balance economic development and preservation by promoting waterfront revitalization and water-dependent uses while protecting fish and wildlife, open space and scenic areas, farmland, and public access to the shoreline, and minimizing adverse changes to ecological systems and erosion and flood hazards. The New York State CMP provides for local implementation when a municipality adopts a local waterfront revitalization program, as is the case in New York City.

B. NEW YORK CITY WATERFRONT REVITALIZATION PROGRAM

The proposed initiatives (Proposed Actions) are intended to enhance coastal and social resiliency along the Tottenville shoreline of the South Shore of Staten Island, NY. These initiatives include the Living Breakwaters Project (Breakwaters Project) and Tottenville Shoreline Protection Project (Shoreline Project), together the “Layered Strategy.” The Proposed Actions are located in the designated Coastal Zone (see **Figure 1**), and are therefore subject to the coastal zone management policies of both the City and the State. The New York City Waterfront Revitalization Program (WRP) is the City’s primary coastal zone management tool and was developed in accordance with the Federal Coastal Zone Management Act of 1972 and New York State Executive Law Article 42: Waterfront Revitalization of Coastal Areas and Inland Waterway Act. The City’s WRP is made up of 10 major policies focusing on the goals of improving public access to the waterfront; reducing damage from flooding and other water-related disasters; protecting water quality, sensitive habitats like wetlands and the aquatic ecosystem; reusing abandoned waterfront structures; and promoting development with appropriate land uses.

In 2011, revisions to the City’s WRP were made to reflect policy elements included in the New York City Department of City Planning’s (NYCDCP) 2011 “Vision 2020 New York City Comprehensive Waterfront Plan,” including incorporation of climate change and sea level rise considerations to increase the resiliency of the waterfront area, promotion of waterfront industrial development and both commercial and recreational water-borne activities, increased restoration of ecologically significant areas, and design of best practices for waterfront open spaces. These revisions to the WRP were approved by the City Council on October 30, 2013 and approved by the NYS Secretary of State on February 3, 2016.

CONSISTENCY OF PROPOSED ACTIONS WITH THE WATERFRONT REVITALIZATION PROGRAM POLICIES

The Proposed Actions comprise implementation of resiliency initiatives intended to work in tandem to enhance coastal and social resiliency and environmental resources along the Tottenville shoreline of the South Shore of Staten Island. For the purposes of this assessment, the Proposed Actions represent the implementation of the Layered Strategy, which includes both the Breakwaters Project and the Shoreline Project. The Layered Strategy was designed with the specific goals and objectives of: (1) risk reduction through attenuation of wave energy, minimization of event-based and long-term shoreline erosion, preservation of beach width, and addressing impacts of coastal flooding; (2) ecological enhancement by increasing the diversity of aquatic habitats for fish and shellfish, consistent with the Hudson-Raritan Estuary Plan; and (3) social resiliency for the Tottenville shoreline of the South Shore of Staten Island by fostering community education on coastal resiliency, increasing physical and visual access to the water's edge, enhancement of community stewardship of on-shore and in-water ecosystems, and increasing access to recreational opportunities.

The Breakwaters Project would include the ecologically enhanced breakwater system, the proposed area of shoreline restoration, the proposed seasonally placed floating dock and in-water oyster nursery, and the proposed Water Hub and accessory seasonal boat launch. The proposed area of one-time sand placement in the area of shoreline restoration would extend along approximately 806 feet of shoreline between Manhattan Street and Loretto Street, where the beach is particularly narrow and vulnerable to erosion, and where there are adjacent vulnerable assets (tidal wetlands and homes) in the FEMA V and Limit of Moderate Wave Action zones in the 100-year floodplain. The breakwater system would consist of 10 breakwater segments occupying approximately 12.7 acres of sand/gravel bottom habitat of Raritan Bay located between 500 and 2,100 feet offshore in waters approximately 2 to 10 feet deep at mean low water. The majority of the breakwater structures would be located more than 1,500 feet from the Federal Navigation Channel, with one breakwater segment located more than 700 feet from the channel. The breakwater segments would comprise bedding stone (scour apron), core stone, rip rap stone, and armor units made of stone or bio-enhancing concrete, and "reef streets" and "reef ridges" extending out along the bottom of the Bay.

Installation of the breakwaters would result in the displacement of approximately 12.7 acres of subtidal sand/gravel habitat with complex rock and bio-enhancing concrete breakwater segments. Active oyster restoration is planned for areas on and adjacent to the breakwaters via several techniques, including a floating nursery structure that would be accessible for public observation, monitoring, and stewardship. The Breakwaters Project would reduce wave energy at the shoreline; reduce/reverse shoreline erosion; increase habitat diversity through provision of complex subtidal, intertidal, and emergent rocky structure elements; and promote social resilience through the educational and community programs at the Water Hub.

One of two potential locations under consideration would be selected for siting the Water Hub. Potential Location 1 would be in the vicinity of the southern terminus of Page Avenue and would include the construction of a new structure. Potential Location 2 would be in the northwestern portion of Conference House Park and would include the rehabilitation and adaptive reuse of an existing NYC Parks building.

Potential Location 1:

Potential Location 1 is located in the vicinity of the southern terminus of Page Avenue. At this location, there are two options for the construction of the Water Hub. The first, Page East Option, would locate the proposed Water Hub in an existing Conference House Park parking lot and surrounding wooded area immediately east of Page Avenue. The second, Page West Option, would use a grassy site west of Page Avenue that has previously contained a two-story NYC Parks building (which was demolished in 2016 due to substantial damage caused by Superstorm Sandy). The proposed Water Hub facility is expected to include an enclosed 5,000-square-foot building and approximately 35,500 square feet of site improvements that would include landscaping, parking and utility spaces and designated space for the use of NYC Parks vehicles and equipment. An approximately 210-foot-long by 8-foot wide accessory seasonal boat launch would extend from about 1 foot above MHW to water depths sufficient for docking of a shallow draft research vessel in water depths between 4 and 5 feet at MLW. The proposed Water Hub would provide direct on-site waterfront access and would include parking for visitors, as well as several on-shore and near-shore landscape elements. It is anticipated that the facility would be used by the New York Harbor Foundation, NYC Parks, and local schools and community groups. Should Water Hub programming be located at Potential Location 2, a small facility would be located at Potential Location 1 to provide seating, wayfinding potential storage for kayaks and beach cleaning equipment. This structure would be a pavilion, shed or other light structure with a footprint of 1,600 square feet or less connected to the public water supply but without sanitary facilities. The existing parking facilities at the terminus of Page Avenue would be used to access this facility.

Potential Location 2:

Potential Location 2 is located in the north-western portion of Conference House Park. At this location, there are two options for the adaptive reuse of existing NYC Parks buildings for Water Hub programming: Henry Hogg Biddle House (Biddle House); and the Rutan-Beckett House. Water access would be provided in the vicinity of the NYC Parks building selected for adaptive reuse, or at the existing Conference House Park Pavilion which will be undergoing renovations in 2017 and 2018. Water access from the Biddle House or Rutan-Beckett house would be provided by ADA accessible pathways and ramps leading to a seasonally deployed temporary floating boat. At the site of the pavilion, water access would be provided by a ramp extending from the Pavilion to a floating dock. Parking for Water Hub activities at Potential Location 2 would be accommodated at the existing Conference House Park Visitor's Center.

The Shoreline Project would provide on-shore stabilization measures that would augment the wave attenuation and risk reduction potential provided by the Breakwaters Project. It would include a series of shoreline protection measures extending along approximately 5,300 feet of the Tottenville shoreline almost entirely within NYC Parks' Conference House Park¹ from approximately west of the intersection of Swinnerton Street and Billop Avenue to Page Avenue, including, from west to east: an earthen berm, hybrid dune system, eco-revetment, and raised edge (revetment with trail), along with wetland enhancement and landscaping with coastal vegetation. The hybrid dune would replace the section of man-made temporary dune comprising sand-filled barrier bags that was installed following Superstorm Sandy between Brighton Street

¹ With the exception of a small portion of the Shoreline Project proposed within an unbuilt portion of the NYCDOT Surf Avenue right-of-way, all on-shore project components would be constructed within the boundaries of Conference House Park.

and Loretto Street. Green infrastructure would be implemented wherever possible and permeable path materials would be used throughout the project. Three Americans with Disabilities Act (ADA) compliant access points and overlooks would be constructed along the shoreline protection system. Portions of the Breakwaters Project and Shoreline Project would be located within the 100-year floodplain and New York State Coastal Erosion Hazard Area (CEHA).

An assessment of the Proposed Actions' consistency with the revised New York City WRP is provided below for all questions answered "Promote" or "Hinder" on the revised 2016 Coastal Assessment Form included with this assessment. The New York State Department of State Coastal Management Program Federal Consistency Assessment Form and New York State Department of State Coastal Management Program Coastal Assessment Form included with this assessment assess the consistency of the Proposed Actions with the New York State Coastal Management Program policies.

Policy 3: Promote use of New York City's waterways for commercial and recreational boating and water-dependent transportation.

3.1 Support and encourage in-water recreational activities in suitable locations.

The proposed community Water Hub site Potential Locations 1 and 2 would provide waterfront and water access for human-powered boating. Storage for kayaks would potentially be available onsite. A seasonally deployed floating boat launch, which would be stored on-shore during the winter months, would allow access for a shallow draft research vessel operated by the New York Harbor Foundation's Billion Oyster Project (BOP) and the New York Harbor School (NYHS). There are currently two proposed sites for the Water Hub facility, as described above. The seasonal floating dock would also provide water-based access to the breakwaters system, including the floating oyster nursery. The location of the breakwater segments would be marked in accordance with United States Coast Guard (USCG) requirements, and the segments would be spaced far enough apart to avoid interference with recreational boating in Raritan Bay.

Therefore, the Proposed Actions would promote this policy.

3.4 Minimize impact of commercial and recreational boating activities on the aquatic environment and surrounding land and water uses.

Promoting use by small research vessels would be consistent with existing use of Raritan Bay and would not result in adverse impacts to the aquatic environment. The location of the breakwater segments would be marked in accordance with USCG requirements, and the segments would be spaced far enough apart to avoid interference with recreational boating in Raritan Bay.

Therefore, the Proposed Actions would promote this policy.

Policy 4: Protect and restore the quality and function of ecological systems within the New York City coastal area.

4.4 Identify, remediate and restore ecological functions within Recognized Ecological Complexes.

Two Recognized Ecological Complexes (RECs) exist within or adjacent to the study area: Conference House Park, Hybrid Oak Woods Park. One additional REC, Butler Manor Woods, is located north of Potential Location 1 for the Water Hub. The south shore of Staten Island, which includes the three RECs, is vulnerable to projected sea

level rise, with predictions of increased flooding and erosion during storm events. The Shoreline Project would be located largely within Conference House Park and would alter the current condition of the park in order to improve resiliency against wave action and coastal erosion along the shoreline in Tottenville, while enhancing ecosystems and shoreline access and use. Green infrastructure would be implemented where possible, porous path materials and native coastal vegetation would be incorporated throughout the Shoreline Project. These measures would improve the ecological function and resilience of the existing ecological communities within these RECs, including maritime and wetland communities in the study area.

Therefore, the Proposed Actions would promote this policy.

4.5: *Protect and restore tidal and freshwater wetlands.*

The three main goals of the Proposed Actions are in concert with the goal of protecting and restoring tidal and freshwater wetlands. The Layered Strategy would reduce coastal erosion, enhance ecosystems along the coast, and foster stewardship of these systems with an educational component. Each action would help to protect the tidal and freshwater wetlands present within the study area. Construction of the breakwaters would result in temporary and permanent impacts to New York State Department of Environmental Conservation (NYSDEC) littoral zone tidal wetlands and mapped National Wetlands Inventory (NWI) estuarine wetlands in the vicinity of the breakwater segments due to sediment resuspension during construction of the breakwater segments. Increases in suspended sediment would be temporary, localized, and would dissipate upon cessation of sediment disturbing activities.

There would be a net loss of 5.0 acres of NYSDEC littoral zone tidal wetlands within the footprint of the Type A and Type B breakwater segments, and about 2.0 acres within the portion of the shoreline restoration below mean high water (MHW) as the elevation of the beach is increased, for a total loss of NYSDEC littoral zone tidal wetlands of approximately 7.0 acres. The breakwater alignment, segment length, and distance from shore were designed to promote beach accretion, but avoid the creation of tombolos, or sand spits connecting the shore and breakwater created through deposition, and encroaching on littoral zone wetlands.

The hybrid dune system and wetland bridge within the transition between the earthen berm and hybrid dune, and a portion of the proposed path would be constructed within the 0.8-acre delineated tidal wetland. The area of this delineated tidal wetland that would be affected by the Shoreline Project elements would include approximately 7,358 square feet (0.17 acres) due to the hybrid dune, 1,608 square feet (0.04 acres) due to the path, and 1,245 square feet (0.03 acres) due to the transition node structure. Permanent impacts to the tidal wetland would be primarily within the portion of the wetland dominated by common reed and while the loss of a portion of the wetland would be an adverse effect, it would be offset by the enhancement of the tidal wetland plant community that would result from the proposed modification of the inlet to Raritan Bay to increase tidal exchange within this wetland. The portion of the path that crosses through the wetland would be designed in consultation with the NYSDEC and USACE to allow access across the wetland while minimizing adverse effects to the tidal wetland. Temporary impacts would be minimized through the use of marsh mats or low ground-pressure equipment within the wetland and installation of erosion and sediment control measures throughout the construction area in accordance with a Stormwater Pollution

Prevention Plant (SWPPP) prepared as required under the State Pollutant Discharge Elimination System (SPDES) General Permit GP-0-15-002 for Stormwater Discharges from Construction Activity (General Permit). Wetland vegetation would be planted to replace vegetation temporarily disturbed during construction. With these measures in place temporary impacts to wetlands during construction and the permanent loss of a small portion of the wetland due to the placement of the hybrid dune and transition node structure would not result in significant adverse impacts to wetland resources.

Elements of the shoreline component of the Proposed Actions (i.e., the hybrid dune, eco-revetment, raised edge, parking lot for Potential Location 1 for the Water Hub, and shoreline restoration) would be built within the NYSDEC-regulated tidal wetlands adjacent area (TWAA). Within the TWAA outside the shoreline restoration area, erosion and sediment control measures (e.g., silt fencing and hay bales) would be implemented in accordance with a SWPPP prepared for the project as required by the General Permit and would minimize discharges of sediment during construction and avoid adverse effects to wetlands. The hybrid dune would be permeable, thereby enhancing the function of the TWAA in protecting NYSDEC littoral zone tidal wetlands within Raritan Bay by stabilizing the shoreline and allowing for infiltration of some runoff from adjacent uplands. The raised edge and eco-revetment would also use permeable surfaces where feasible and would include stormwater management measures, such as bioswales, to maintain the protective function of the TWAA. The parking area for the Water Hub at Potential Location 1 would likewise be designed as a pervious surface and would include perimeter screening, interior landscaping, and stormwater management to manage any net runoff generated by the parking area. The Proposed Actions would minimize the introduction of impervious surfaces within the NYSDEC TWAA, would stabilize the shoreline while minimizing the potential for erosion of the beach, would enhance the habitats through the establishment of native dune vegetation and other native coastal plant species throughout the Shoreline Project, and would not adversely affect the function of the TWAA to protect NYSDEC littoral zone tidal wetlands.

Therefore, the Proposed Actions would promote this policy.

- 4.6:** *In addition to wetlands, seek opportunities to create a mosaic of habitats with high ecological value and function that provide environmental and societal benefits. Restoration should strive to incorporate multiple habitat characteristics to achieve the greatest ecological benefit at a single location.*

The Breakwaters Project would integrate the goal of increasing habitat diversity and restoring ecological functions to a portion of Raritan Bay through the establishment of ecologically enhanced breakwater system designed to reduce wave energy at the shoreline, and prevent or reverse shoreline erosion while creating hard/structured marine habitat. Through the provision of approximately 41.2 acres of complex rocky habitat surface including the creation of reef streets, reef ridges, and interstitial habitat compared to the 12.7 acres of sand/gravel bottom that would be displaced, the proposed breakwaters would increase habitat diversity for benthic invertebrates, increase diversity of forage and shelter habitat for fish, and provide opportunities for oyster restoration through a variety of techniques. The breakwaters would also incorporate bio-enhancing concrete units to enhance the attraction of habitat-forming and habitat-augmenting macroinvertebrates and algae, which would further facilitate development of a rich aquatic community.

The connectivity and design of the Shoreline Project components, including smooth transitions between each section and planting of native coastal vegetation throughout, would provide diverse habitat for a number of shoreline terrestrial and avian species. Landscaping would create gradual transitions where appropriate to enhance habitat value; for example, planting of American beach grass on the hybrid dune system would soften the transition between the existing beach and inland scrub/shrub and maritime forest to increase availability of habitat for coastal wildlife. As described under Policy 4.4, the Shoreline Project would improve the ecological function and resilience of the existing ecological communities, including maritime and wetland communities in the study area, while increasing the resiliency of the Tottenville shoreline and providing risk reduction from the effects of wave action, coastal flooding, and shoreline erosion.

Therefore, the Proposed Actions would promote this policy.

- 4.7:** *Protect vulnerable plant, fish, and wildlife species, and rare ecological communities. Design and develop land and water uses to maximize their integration or compatibility with the identified ecological community.*

Federally-listed aquatic species that are considered by National Marine Fisheries Service (NMFS) to have the potential to occur in Raritan Bay, near the project site, include Atlantic sturgeon (*Acipenser oxyrinchus*; endangered), loggerhead sea turtle (*Caretta caretta*; threatened), green sea turtle (*Chelonia mydas*; threatened), and Kemp's ridley sea turtle (*Lepidochelys kempi*; endangered). The Breakwaters Project would be designed to minimize any potential change in aquatic resources that would adversely affect use of Raritan Bay by these species. While Atlantic sturgeon are not expected to occur in significant numbers within the study area, transient adults and sub-adults may be present as they move through shallower marine waters along the Atlantic coast. These life stages are benthic feeders, and placement of the breakwaters over 12.7 acres of sandy/gravel bottom could temporarily disturb foraging habitat. However, the footprint of the breakwater structures will represent only about 2 percent of the 610 acres of available inshore habitat in the study area within Raritan Bay, and Atlantic sturgeon would be able to avoid the construction area in favor of suitable habitat nearby. Subadult and adult Atlantic sturgeon consume a greater proportion of fish in their diets compared to younger life stages and structure-oriented forage fish are expected to colonize the breakwaters. Once the breakwaters are established, Atlantic sturgeon will be able to forage for benthic fish and invertebrates in and around the structures. Sea turtles are considered to have the potential to occur within the study area on rare occasions, and only as transients rather than for long-term occupation for breeding, wintering, or growth and development; therefore, neither construction nor operation of the Breakwaters Project would be expected to result in significant adverse effects to sea turtles.

In response to a request for information on state-listed species and significant natural communities, NYNHP provided the following non-historical records from within 0.5 miles of the project site: sweetbay magnolia (*Magnolia virginiana*; endangered), northern gama grass (*Tripsacum dactyloides*; endangered), willow oak (*Quercus phellos*; endangered), wild potato vine (*Ipomoea pandurate*; endangered), yellow giant-hyssop (*Agastache nepetoides*; threatened), white-bracted boneset (*Eupatorium leucolepis* var. *leucolepis*; endangered), persimmon (*Diospyros virginiana*; threatened), and dune sandspur (*Cenchrus tribuloides*; threatened). Dune sandspur, northern gamma

grass, and yellow giant-hyssop were observed within the study area. Measures to minimize impacts (e.g., seed collection and propagation, replanting within the study area, transplanting of plants, etc.) would be developed in association with NYC Parks and NYSDEC. The other state-listed plant species are not expected to occur within the study area on the basis of their habitat requirements and the existing habitats.

Federally endangered, threatened, candidate, or proposed species listed by the U.S. Fish and Wildlife Service (USFWS) IPaC System as occurring in Richmond County near the project site include the piping plover (*Charadrius melodus*; threatened) and roseate tern (*Sterna dougalli*; endangered). Habitat for these species is not present within the study area and individuals of these species were not observed during reconnaissance surveys. The only listed wildlife species that were observed within the study area during the May 18 and June 9, 2015 wildlife reconnaissance were the osprey (*Pandion haliaetus*; special concern) and common tern (*Sterna hirundo*; threatened), both of which were seen passing overhead or offshore from the project site. None of the birds documented by the 2000-2005 Breeding Bird Atlas in the census block in which the project site is located are federally- or state-listed.

Four species of reptiles and amphibians that were documented by the Herp Atlas Project and are considered to have the potential to occur within the study area on the basis of their habitat associations are state-listed: eastern mud turtle (*Kinosternon subrubrum*; endangered), eastern box turtle (*Terrapene carolina carolina*; species of special concern), eastern fence lizard (*Sceloporus undulatus*; threatened), and southern leopard frog (*Lithobates sphenoccephalus*; species of special concern). Should any of these species be encountered during construction of the Proposed Actions, they would be relocated to appropriate habitat in the vicinity beyond the limits of construction to avoid any direct impacts. Suitable habitat for the eastern mud turtle and southern leopard frog exists at least 250 feet from the Shoreline Project's limits of disturbance, and would not be impacted by construction of the Proposed Actions, nor would the Proposed Actions result in adverse impacts to migration or overwintering for these species. Eastern box turtle and eastern fence lizard have the potential to occur in the vicinity of the proposed earthen berm between Carteret Street and Brighton Street. During construction, the project site would be blocked with silt fencing that would prevent these species from entering the construction area. The berm would be sited along an existing trail through the wooded area and planted with native vegetation, thereby minimizing disturbance and reducing the current fragmentation caused by the existing trail. The earthen berm would not result in a change in habitat availability and would not create a barrier to the movement of these species, and both would be expected to occur in the area with the same likelihood and in the same abundance.

Therefore, the Proposed Actions would promote this policy.

4.8: *Maintain and protect living aquatic resources.*

During construction of the Proposed Actions, temporary sediment resuspension and localized increases in turbidity would occur during the placement of the breakwater structures and potentially during movement of construction vessels. Suspended sediments would settle quickly following cessation of sediment disturbing activities and would not result in adverse impacts to aquatic resources. The Breakwaters Project would also be designed to minimize any potential for adverse impacts to water quality and indirect adverse impacts to aquatic resources outside the footprint of the breakwater

elements. Once installed, the breakwaters would result in small changes to flow patterns on the edges of the structures, but this would not result in changes to the overall flow patterns and circulation of Raritan Bay. The Proposed Actions would not adversely affect water circulation and tidal flushing in Raritan Bay, and would not, therefore, result in adverse impacts to water quality and aquatic resources. For the Water Hub and Shoreline Project, construction activities would be conducted in accordance with the SWPPP developed as required by the General Permit, minimizing the potential for stormwater runoff to adversely affect Raritan Bay aquatic resources during construction and operation of these components.

The Breakwaters Project would ultimately increase habitat diversity for aquatic biota through the establishment of a combination of intertidal and subtidal reef-like habitat and the incorporation of reef streets that would provide shelter for juvenile fish, increase biological recruitment of filter-feeding organisms such as mussels and oysters, and enhance opportunities for shellfish restoration within Raritan Bay. Oyster restoration efforts, including bio-enhancing units containing oysters, oyster gabions, in-situ oyster setting on a trial basis, spat-on-shell, and the oyster nursery structure, would support the development of a self-sustaining, viable mollusk population on the breakwater network. The increased habitat complexity could result in a benthic community anchored by a healthy population of habitat-forming species that includes native oysters, mussels, macroalgae, barnacles, bryozoans, tunicates, tubeworms, and sponges, which would in turn support smaller forage fish and the higher trophic level species that feed on them. Species that use rocky substrate or structures for spawning or nursery habitat would be able to use the breakwaters for these purposes. Since the footprint of the breakwaters represents only 2 percent of the available sand/gravel inshore habitat in the study area, and construction of the breakwaters would occur sequentially rather than all at once, sufficient habitat would be available in the vicinity for species that require sand or gravel substrate.

Therefore, the Proposed Actions would promote this policy.

Policy 5: Protect and improve water quality in the New York City coastal area.

5.1: Manage direct or indirect discharges to waterbodies.

As discussed above, a SWPPP would be implemented as part of the construction and operation of the Water Hub and Shoreline Project, and landside construction activities would be conducted in accordance with the General Permit. No discharge would be associated with the in-water portion of the Breakwaters Project. Additionally, the implementation of green infrastructure (e.g., bioswales) and permeable surface where possible, along with landscaping with native coastal vegetation, would facilitate infiltration of stormwater throughout the Shoreline Project and for portions of the Water Hub. With these measures in place, stormwater discharges from the proposed Water Hub and Shoreline Project would not have the potential to result in significant adverse impacts to Raritan Bay.

Therefore, the Proposed Actions would promote this policy.

5.2: Protect the quality of New York City's waters by managing activities that generate nonpoint source pollution.

The SWPPP prepared for the Proposed Actions would include erosion and sediment control measures consistent with the New York Standards and Specifications for Erosion and Sediment Controls to minimize the potential for discharge of sediments to Raritan Bay during construction. The post-construction stormwater control measures implemented under the SWPPP would comply with the applicable version of the New York State Stormwater Management Design Manual. There would be no discharge associated with the Breakwaters Project.

Therefore, the Proposed Actions would promote this policy.

5.3: *Protect water quality when excavating or placing fill in navigable waters and in or near marshes, estuaries, tidal marshes, and wetlands.*

No dredging would occur as a result of the Proposed Actions. The Breakwaters Project would result in the replacement of 12.7 acres of sand/gravel habitat with 41.2 acres of diverse rocky surface. The breakwaters would be constructed in a manner that would minimize the potential for resuspension of bottom sediment in accordance with state and federal permits, including timing restrictions for in-water activities. Geotextile panels, which would underlay the breakwater structures, would be floated to their final location and lowered to the bottom under the weight of large rocks to minimize sediment resuspension. Stone and bio-enhancing units would be placed on top of the geotextile; these materials would be “clean” to further minimize the potential for release of suspended sediment. Construction vessels would maintain at least 2 feet of clearance from the bottom, or work only at tide levels sufficient to keep the barges off the Bay bottom, to minimize sediment resuspension caused by their movement. Sediment disturbing activities would not impact the listed resources. Placement of 15,369 cubic yards (CY) of sand within 2.0 acres of beach below MHW is intended to reduce erosion and augment the accretion potential of the breakwaters in targeted sections of the shoreline; shoreline restoration activities would be completed outside the spawning period for horseshoe crab and would not adversely affect the listed resources.

Therefore, the Proposed Actions would promote this policy.

5.4: *Protect the water quality and quantity of groundwater, streams, and the sources of water for wetlands.*

Any groundwater recovered during dewatering would be treated prior to discharge in accordance with NYSDEC requirements. Excavation of soils to construct the on-shore components of the Proposed Actions would not have the potential to adversely affect groundwater due to soil contamination. The proposed removal unpermitted fill within a portion of the shoreline, which was determined to meet the NYSDEC Soil Cleanup Objectives (SCOs) for residential use and for protection of groundwater, would not adversely affect groundwater. Green infrastructure measures incorporated into the Shoreline Project and the proposed Water Hub component of the Breakwaters Project would allow runoff to infiltrate into the soil and recharge to groundwater. All of the Shoreline Project risk reduction elements would be porous and would allow seepage of bay and groundwater through the structures. The landscaped areas within the Shoreline Project and at the Water Hub would be maintained using Integrated Pest Management (IPM) techniques thereby substantially diminishing the need for the use of pesticides and other chemicals and minimizing adverse effects to groundwater quality. Therefore, the Proposed Actions would not result in significant adverse impacts to groundwater.

With the implementation of a SWPPP as required by the General Permit, construction and operation of the Water Hub and Shoreline Project would not have the potential to adversely affect streams or other sources of water to existing wetlands.

Therefore, the Proposed Actions would promote this policy.

5.5: *Protect and improve water quality through cost-effective grey-infrastructure and in-water ecological strategies.*

The Proposed Actions would involve establishment of a combination of intertidal and subtidal reef-like habitat and promote the colonization of filter-feeding organisms, such as oysters and other shellfish, which have the potential to result in a beneficial effect on water quality by filtering water pollutants. Green infrastructure, permeable surfaces, and native coastal vegetation along the elements of the Shoreline Project would improve infiltration of surface water. Implementation of the SWPPP will minimize the potential for stormwater discharges to adversely affect the water quality and aquatic resources of Raritan Bay following construction of the Shoreline Project and Water Hub.

Therefore, the Proposed Actions would promote this policy.

Policy 6: Minimize loss of life, structures, infrastructure, and natural resources caused by flooding and erosion, and increase resilience to future conditions created by climate change.

6.1: *Minimize losses from flooding and erosion by employing non-structural and structural management measures appropriate to the condition and use of the property to be protected and the surrounding area.*

The upland portion of the study area is located within the 100-year floodplain in Zones AE and VE. Zones AE and VE are considered Special Flood Hazard Areas (SFHA). Most of the south shore of Staten Island is designated as a Coastal Erosion Hazard Area (CEHA). The Layered Strategy would create a structural system of living breakwaters and shoreline resilience measures that would attenuate wave action, minimize shoreline erosion, and address the impacts of coastal flooding along the South Shore of Staten Island. Considering up to 30 inches of sea level rise, the Breakwaters Project was designed to reduce wave heights to less than 3 feet in a 100-year storm event, thereby reducing wave energy at the shoreline and structural damage to onshore assets previously exposed to wave action. The location and crest elevations of each breakwater segment were selected based on the relative need for storm wave attenuation along the shoreline.

Breakwaters with higher elevations and shorter gap widths would be sited to protect upland areas with vulnerable buildings and infrastructure, while breakwaters with lower crest elevations would be sited where the shoreline is not as vulnerable. The breakwater system would maintain and restore the beach while minimizing down-drift impacts. The breakwaters would attenuate waves and alter sediment transport along the shore for this purpose. Local sediment transport rates and accretion would be altered but the natural processes would not be blocked as there would still be sediment transport along the shore and tidal circulation around the breakwaters. The 3.8 acres of sand placement as part of the shoreline restoration proposed for the narrow section of shoreline between Loretto Street and Manhattan Street would add sediment to the overall system and encourage accretion in the narrowest sections of the beach. The earthen berm, hybrid dune, eco-revetment, raised edge with revetment, and associated landscaping and

ecological enhancements of the Shoreline Project would stabilize the shoreline and augment the wave attenuation and risk reduction potential provided by the Breakwaters Project. Green infrastructure measures, permeable surfaces, and native coastal vegetation would increase infiltration in the study area and help to minimize erosion from surface runoff.

Therefore, the Proposed Actions would promote this policy.

6.2: *Integrate consideration of the latest New York City projections of climate change and sea level rise (as published by the NPCC, or any successor thereof) into the planning and design of projects in the city's Coastal Zone.*

The Layered Strategy considered up to 30 inches of sea level rise, consistent with the latest 90th percentile prediction for the 2050s from the New York City Panel on Climate Change's (NPCC's) 2015 report. The breakwater segments have been designed with a target functional design life of 50 years at the current rate of sea level rise, after which they would require additional work to upgrade or adapt the structures to increase their lifespan. Likewise, each element of the Shoreline Project has been designed to have a functional lifespan of 50 years. The breakwaters would attenuate wave action and reduce shoreline erosion from day-to-day tidal processes as well as storm events; the one-time shoreline restoration would increase the overall amount of sediment available in the system to further reduce erosion risk and encourage accretion in targeted areas of the beach. The system of shoreline risk reduction measures would incorporate both structural and non-structural elements to reduce wave action and provide some level of risk reduction from coastal flooding. The green infrastructure and permeable surface features of the Shoreline Project would allow seepage of surface water, and native coastal vegetation would be consistent with salt-water environments. The Water Hub would be designed to comply with Executive Orders 13690 and 11988 in the siting and configuration of the facility.

With the exception of the hybrid dune of the Shoreline Project, and the Water Hub (both potential locations) and Type B and C breakwaters of the Breakwaters Project, the remaining portions of the Breakwaters Project and Shoreline Project would be below the 100 year flood event elevation under the low prediction for sea level rise through 2100. The hybrid dune and Type B and C breakwaters would remain above the 100-year flood event elevation under the high prediction for sea level rise until the 2050s. The Shoreline Project and the Breakwaters Project were designed with the consideration of 30 inches of sea level rise and are designed to provide resilience to the Tottenville shoreline into the 2050s. There are no structures or materials that would be dispersed, and none of the Shoreline Project elements would include human occupancy.

The Water Hub facility at Potential Location 1 was designed as a pile-supported building with a floor elevation of +18 feet. At this height, the Water Hub would remain above the highest predictions for sea level rise through the 2080s and throughout its 50-year design life, and would not likely be susceptible to flooding. At Potential Location 2, the two existing NYC Parks structures with the potential to be rehabilitated and adaptively used as the Water Hub facility are located at elevations of approximately +36 and +64 feet NAVD88, well above the 100-year flood elevation, and would be well above the highest predictions for sea level rise through the 2080s. The Type B and C breakwaters were designed to have higher crest elevations compared to the Type A breakwaters (+14 feet compared to +5 feet). This was based on the relative need for

storm wave attenuation along the shoreline, the intent to stabilize shoreline change across the project area, and to promote shoreline accretion in key locations. The Type B and C breakwaters would be sited to protect assets in sections of the shoreline that are most vulnerable to storm wave action; thus, these breakwaters would remain above the flood elevation with up to 30 inches of sea level rise. The Type A breakwaters, which were designed to function with sea level rise, would be placed where there are no assets vulnerable to storm wave energy along the shoreline. As sea level continues to rise, each breakwater type would continue to attenuate waves, thereby reducing wave energy at the shoreline and structural damage to on-shore assets. Over the lifespan of the project, there would be no vulnerable, critical, or potentially hazardous features that would be located below the elevation of MHHW under any sea level rise scenario. The Proposed Actions would provide risk reduction from coastal flooding and storm events to the south shore of Staten Island, including to areas landward of the Shoreline Project elements, and would not lead to increased flooding in adjacent areas.

Therefore, the Proposed Actions would promote this policy.

- 6.3:** *Direct public funding for flood prevention or erosion control measures to those locations where the investment will yield significant public benefit.*

Consistent with the City's Coastal Protection Initiatives and planning studies for the Tottenville area, the goal of the Layered Strategy is to reduce wave energy and coastal erosion along the vulnerable shoreline in Tottenville, while enhancing ecosystems and shoreline access, use, and stewardship. This goal would be achieved using a layered approach that would address wave action, impacts of coastal flooding and event-based (i.e., short-term/storm-related) and gradual (long-term) shoreline erosion, while restoring and enhancing ecosystems, improving waterfront access, and engaging with the community through educational programs directly related to the coastal resiliency actions. As described above under Policy 6.1, the Layered Strategy has been designed to attenuate wave energy, reduce or reverse shoreline erosion, and address the impacts of coastal flooding along an area of the shoreline where buildings and infrastructure, including residential structures, are particularly vulnerable to storm events and sea level rise.

Therefore, the Proposed Actions would promote this policy.

- 6.4:** *Protect and preserve non-renewable sources of sand for beach nourishment.*

One of the goals of the Layered Strategy is to reduce or reverse shoreline erosion and increase beach width. The breakwater system would reduce wave energy that contributes to shoreline erosion, and the upland shoreline protection system would be vegetated with appropriate vegetation to withstand wind and water erosion. As described under Policy 6.1, the Proposed Actions have been designed to ensure that the accretion of sand that would result from the Breakwaters Project would grow the beach while minimizing down-drift impacts. Local sediment transport rates and accretion would be altered, but the natural processes would not be blocked as there would still be sediment transport along the shore.

Therefore, the Proposed Actions would promote this policy.

Policy 7: Minimize environmental degradation and negative impacts on public health from solid waste, toxic pollutants, hazardous materials, and industrial materials that may pose risks to the environment and public health and safety.

7.1 Manage solid waste material, hazardous waste, toxic pollutants, and substances hazardous to the environment to protect health, control pollution, and prevent degradation of coastal ecosystems.

Excavation of soils along the other portions of the Shoreline Project and any shallow excavation that would occur at the Water Hub at either potential location is not anticipated to encounter widespread or significant soil or groundwater contamination. Should evidence of contaminated soil and/or sand, creosote-treated wood, or other contaminants be encountered, these materials would be segregated and disposed of in accordance with applicable federal, state and local regulations.

Therefore, the Proposed Actions would promote this policy.

Policy 8: Provide public access to and along New York City's coastal waters.

8.1 Preserve, protect, maintain, and enhance physical, visual and recreational access to the waterfront.

The Proposed Actions would reduce wave energy and coastal erosion along the shoreline in Tottenville, while enhancing ecosystems and shoreline access and use. This goal would be achieved using a layered approach that would address wave action, impacts of coastal flooding and event-based (i.e., short-term/storm-related) and gradual (long-term) shoreline erosion, while restoring and enhancing ecosystem functions, improving waterfront access and engaging with the community through educational programs directly related to the coastal resiliency actions. The proposed community Water Hub site would provide waterfront and water access for human-powered boating at both Potential Locations 1 and 2. Storage for kayaks would potentially be available onsite. A floating boat launch would also be deployed seasonally as part of the Water Hub facility to provide access for shallow draft research vessels. The Shoreline Project would incorporate a continuous pathway through each component, and would also provide three ADA accessible access points and overlook areas to enhance physical, visual, and recreational access to the waterfront for the public.

With the proposed in-water breakwaters system, views in the Project Area would be similar to existing views that already include distant land masses. Residents closest to the proposed Water Hub locations, including those on Ottavio Promenade, would continue to have stationary views of Raritan Bay and certain nearby waterfront elements, with the addition of the Water Hub. Views near Potential Location 2 in Conference House Park would not change for viewers near the Water Hub, as the facility would be located within an existing building in Conference House Park, and views toward the waterfront from vantage points near Potential Location 2 likewise would not change with the Water Hub. Views of the waterfront from Billop Avenue near the proposed earthen berm would change, however the earthen berm would be located in a densely wooded area that already limits views. The proposed hybrid dune would be slightly taller than the existing temporary dune system, but this would result in minimal changes to views from nearby lookout points, which are already slightly obscured. The eco-revetment and raised edge would not result in adverse impacts to existing views of the waterfront. Overall, each element of the Layered Strategy would provide views to

the waterfront that are similar to existing conditions and would enhance connectivity with existing visual resources.

Therefore, the Proposed Actions would promote this policy.

8.2 *Incorporate public access into new public and private development where compatible with proposed land use and coastal location.*

As described above under Policy 8.1, the Proposed Actions would provide public access along the shoreline that is compatible with the preservation of natural resources and existing open space, and would incorporate the education of such preservation into the use of the Water Hub. The Shoreline Project would include landscaping with coastal vegetation that would soften the boundaries between each element and avoid habitat impairment. New public amenities would be introduced into the park that would complement existing public use of the site, and ADA accessible access points to the waterfront would be incorporated into each section of the Shoreline Project. NYC Parks and the New York Harbor Foundation would share operation and use of the Water Hub, including the seasonally deployed floating dock and boat launch, and the Water Hub would be walkable from the Tottenville neighborhood.

Therefore, the Proposed Actions would promote this policy.

8.3: *Provide visual access to coastal lands, waters and open space where physically compatible and appropriate.*

As described above under Policy 8.1, some elements of the Shoreline Project would result in minimal changes to views in certain parts of the study area; however the Proposed Actions would preserve visual access to coastal lands, waters, and open space. The Proposed Actions, particularly the proposed community Water Hub at Potential Location 1, would provide new visual access to an enhanced coastal environment. Bird watching stations and overlooks or terraces are proposed, along with landscape elements that would complement the community stewardship the Layered Strategy would aim to promote. ADA accessible trails, access points and overlooks would be included in the design of the pathway through the Shoreline Project site to provide further visual access to the waterfront.

Therefore, the Proposed Actions would promote with this policy.

8.4: *Preserve and develop waterfront open space and recreation on publicly owned land at suitable locations.*

As discussed above, the Proposed Actions would protect the beach along the shore by reducing the risk of erosion, providing public access to the waterfront via the proposed community Water Hub and shoreline trails, and preserving and enhancing the condition of natural areas on publicly owned lands such as Conference House Park.

Therefore, the Proposed Actions would promote this policy.

8.5: *Preserve the public interest in and use of lands and waters held in public trust by the state and city.*

As described above under Policy 8.1, the Proposed Actions would protect and enhance public lands and waters by protecting them from further erosion and reducing the risk of

damage from future storms, providing public access to the waterfront, and promoting community stewardship of the public lands of the south shore of Staten Island.

Therefore, the Proposed Actions would promote this policy.

8.6 *Design waterfront public spaces to encourage the waterfront's identity and encourage stewardship.*

The proposed Water Hub, including the seasonal floating dock, would enhance community stewardship by engaging the public in waterfront education, oyster restoration, and cultivating long-term estuary stewardship. The seasonal floating boat launch associated with the Water Hub at either potential location would provide direct access to the water from the shore for shallow draft research vessels. The connected trail system through upland open spaces along the shoreline would include multiple levels of access to the waterfront (i.e., continuous trail, earthen berm, beach access over dune, stairs leading to sidewalk, etc.), and native landscaping throughout would enhance connectivity to the existing scenery.

Therefore, the Proposed Actions would promote this policy.

Policy 9: Protect scenic resources that contribute to the visual quality of the New York City coastal area.

9.1 *Protect and improve visual quality associated with New York City's urban context and the historic and working waterfront.*

An urban design and visual resources analysis was prepared in accordance with *City Environmental Quality Review (CEQR) Technical Manual* methodologies and in compliance with the New York State Department of Environmental Conservation (NYSDEC) *Assessing and Mitigating Visual Impacts* policy memorandum (DEP-00-2, issued 7/31/00) on assessing and mitigating effects on visual and aesthetic resources. The analysis provides a description of existing urban design characteristics, visual resources, and viewshed conditions within the project area. Aesthetic and visual resources were identified, including Conference House Park and historic structures within the park, and views toward the waterfront and Raritan Bay. The Layered Strategy would result in the proposed in-water breakwaters system that would be visible above the water line and distant from the shoreline. The in-water elements would appear similar to existing views of the land masses that can already be seen from current viewer vantage points. As such, no urban design components would be affected by this in-water system. The proposed Water Hub structure at Potential Location 1 is anticipated to be small in scale and clad in materials to enhance visual connections to the nearby waterfront areas. Should the Water Hub be located at Potential Location 2, a small structure would be constructed near the terminus of Page Avenue at Potential Location 1. This small facility would be much smaller than the Water Hub that would be developed at Potential Location 1 and would not affect urban design components. At Potential Location 2, the Water Hub would involve the rehabilitation of the interior of one of two existing buildings in Conference House Park—the Henry Hogg Biddle House or the Rutan-Beckett House, historic architectural resources. The rehabilitation and adaptive use would not alter the building's appearance or visual aesthetic nor affect the views of nearby residents. Therefore, the Breakwaters Project would be compatible with the surrounding area and would not result in any significant adverse impacts to urban design.

Further, the four primary components of the Shoreline Project would result in enhancements to shoreline access through new waterfront access points, overlooks, and walkways that would be consistent with similar existing elements. The proposed Shoreline Project components would create a continuous trail along the waterfront that would create and contribute to the pedestrian experience of the waterfront. The Shoreline Project area would create new urban design elements that would enliven the study area and create visual interest in areas near the shoreline.

With the proposed in-water breakwaters system, views in the study area would be similar to existing views that already include distant land masses. Views from the areas of the Shoreline Project would continue to include wide open views of Raritan Bay, although some views from vantage points closest to the project elements would change. Views from vantage points near the earthen berm would change, however the berm would be located in a densely wooded area that already limits views. The hybrid dune system would be slightly taller than the existing temporary dune, but this would result in minimal changes to views from nearby lookout points, which are already slightly obscured. The Water Hub facility at Potential Location 1, as described above, would be located near the shoreline to provide physical and visual connections to the waterfront. Views near the Water Hub at this location would change for viewers closest to the facility; however, the Water Hub would be designed to be contextual to the surrounding area and buildings in terms of scale, siting, and material. Should the Water Hub be located at Potential Location 2, a small structure would be constructed near the terminus of Page Avenue at Potential Location 1. This small facility would be much smaller than the Water Hub structure that would be developed at Potential Location 1. It would be designed to be contextual to the surrounding area and would not result in any significant adverse impacts to viewers. The Water Hub at Potential Location 2 would involve the rehabilitation of the interior of one of two existing historic buildings in Conference House Park. The rehabilitation and adaptive use would not alter the building's appearance or visual aesthetic nor affect the views of nearby residents. The Layered Strategy has been designed to enhance the visual quality of the shoreline through the establishment of native coastal vegetation throughout the project elements, and the Proposed Actions would maintain existing views toward the waterfront and Raritan Bay as well as other aesthetic and visual resources, including historic architectural resources. Therefore, the Proposed Actions would promote this policy.

9.2 *Protect and enhance scenic values associated with natural resources.*

As described above, the Proposed Actions would complement the scenic character of natural resources along the shoreline and within each of the RECs by building up the natural shorelines with dunes and native coastal vegetation. The Layered Strategy would increase physical and visual access to the water's edge, increase community stewardship of on-shore and in-water ecosystems, and each component would be designed to be consistent with scenic values associated with the existing natural resources.

Therefore, the Proposed Actions would promote this policy.

Policy 10: Protect, preserve, and enhance resources significant to the historical, archaeological, architectural, and cultural legacy of the New York City Coastal Area.

10.1 Retain and preserve historic resources, and enhance resources significant to the coastal culture of New York City.

The Proposed Actions would affect an area at the southeastern end of Staten Island, and may involve work in or in the immediate vicinity known and potential historic architectural resources, including resources within Conference House Park, which has played an important role in prehistory (see Policy 10.2) and in colonial/early-American history. In compliance with Section 106 of the National Historic Preservation Act, the Proposed Actions would include measures to avoid, minimize, or mitigate adverse effects on historic and cultural resources—including both architectural and archaeological resources—developed in consultation with New York State Historic Preservation Office (SHPO), LPC, and Tribal Nations representing Richmond County. Compliance under Section 106 fulfills the requirements of Section 14.09 of the New York State Historic Preservation Act.

Conference House Park contains known and potential historic architectural resources—the Conference House/Christopher Billopp House (National Historic Landmark [“NHL”], listed on the State and National Registers of Historic Places [“S/NR”], and a designated New York City Landmark [“NYCL”]), the Henry Hogg Biddle House (NYCL and appears S/NR-eligible, per New York City Landmarks Preservation Commission (LPC) comment letter dated November 9, 2016), the Sam and Hannah Woods House (appears S/NR-eligible, per LPC comment letter dated November 9, 2016), and the Rutan-Beckett House, which was identified as a potential architectural resource in a 2011 survey of Tottenville. Located just outside Conference House Park is the James M. Rutan House (S/NR-eligible), which is located across Satterlee Street from the park. The Prince’s Bay Lighthouse, near the northern limits of the project area, is S/NR-eligible and is a NYCL.

Two architectural resources, the Henry Hogg Biddle House and the Rutan-Beckett House, are being considered for Water Hub Potential Location 2. If Water Hub Location 2 is selected, one of these two historic architectural resources would be rehabilitated and adaptively used. If plans move forward to locate the programming for the Water Hub within one of these two buildings, consultation with the consulting parties would continue to be undertaken pursuant to the terms outlined in the Programmatic Agreement executed in May 2013 among the Federal Emergency Management Agency (FEMA), SHPO, the New York State Office of Emergency Management, the Delaware Nation, the Delaware Tribe of Indians, the Shinnecock Nation, the Stockbridge-Munsee Community Band of Mohicans, LPC, and ACHP and specifically pursuant to Appendix D to the Programmatic Agreement, which pertains to the CDBG-DR program for activities in New York City.

In addition, because the Henry Hogg Biddle House is a New York City Landmark (NYCL), if the Biddle House is selected for the Water Hub, NYC Parks would consult with the New York City LPC under the New York City Landmarks Preservation Law regarding any proposed alterations to this NYCL. LPC would review the proposed alterations and, upon approval of the proposed alterations, would issue a Binding Commission Report summarizing LPC’s findings. In addition, should the Rutan-Beckett House be determined S/NR-eligible, consultation regarding proposed alterations to this

building would also be undertaken with SHPO. Should Potential Location 2 be selected for the Water Hub, consultation with SHPO would be undertaken regarding any proposed alterations to the historic resource. As the anticipated alterations to either building would be limited to rehabilitation and adaptive reuse changes, no adverse effects are anticipated.

Therefore, the Proposed Actions would promote this policy.

10.2 *Protect and preserve archaeological resources and artifacts.*

Conference House Park contains the Ward's Point Archaeological Conservation Area, an archaeological historic district that is a NHL and is listed on the S/NR. Pursuant to Section 106 of the NHPA, a Draft Phase 1A Archaeological Documentary Study ("Draft Phase 1A Study") for the Breakwaters and Shoreline areas of potential effect (APEs) was prepared in August 2016.² The study documented the development history of the APEs as well as their potential to yield archaeological resources, including both precontact and historic archaeological resources. In addition, the Phase 1A study documented the current conditions of the Breakwaters and Shoreline APEs and summarized previous cultural resource investigations which have been undertaken in the vicinity.

The Draft Phase 1A study concluded that within the Shoreline APE it is not likely that intact archaeological deposits would be located within the sandy beaches of the Shoreline APE. However, limited portions of the upland areas were determined to possess moderate sensitivity for precontact archaeological resources and moderate sensitivity for historic period archaeological resources. A Phase 1B archaeological investigation was recommended for those areas of archaeological sensitivity within the Shoreline APE that would be impacted by the proposed project. The Breakwaters APE, which is located entirely within the Raritan Bay, was determined to have no sensitivity for archaeological resources dating to the historic period and low to moderate sensitivity for precontact archaeological resources at depths between 25 and 35 feet below the bay floor. As such, the proposed project would not result in impacts to archaeologically sensitive depths and no additional archaeological analysis was recommended for the Breakwaters APE.

Following the submission of the Draft Phase 1A to the consulting parties, the proposed project design was revised to include an additional potential location for the Water Hub (Potential Location 2) as well as alternate locations for water access points along the shoreline within Conference House Park. The Draft Phase 1A will therefore be revised to reflect SHPO's comments and to reflect the changes to the project site's design following the completion of the first draft—including the addition of the new portion of the Shoreline APE located within Conference House Park—and a final version of the Phase 1A will be submitted to SHPO, LPC, and the Tribal Nations for review and comment. In the event that archaeological sensitivity is identified in the newly added

² AKRF, Inc. (2016): "Phase 1A Archaeological Documentary Study: Coastal and Social Resiliency Initiatives for the Tottenville Shoreline: Living Breakwaters and Tottenville Shoreline Protection Projects; Staten Island, Richmond County, New York." Prepared for: the Governor's Office of Storm Recovery; New York, NY.

Coastal and Social Resiliency Initiatives for Tottenville Shoreline DEIS

portions of the Shoreline APE, a Phase 1B archaeological investigation would be recommended as described above.

All Phase 1B testing within the previously identified areas of archaeological sensitivity or any new areas of archaeological sensitivity that may be identified in the newly added portion of the Shoreline APE would be completed in consultation with SHPO, LPC, and the Tribal Nations. Any additional archaeological investigation or consultation with the consulting parties would be completed pursuant to the terms outlined in the Programmatic Agreement executed in May 2013 among the Federal Emergency Management Agency (FEMA), SHPO, the New York State Office of Emergency Management, the Delaware Nation, the Delaware Tribe of Indians, the Shinnecock Nation, the Stockbridge-Munsee Community Band of Mohicans, LPC, and ACHP and specifically pursuant to Appendix D to the Programmatic Agreement, which pertains to the CDBG-DR program for activities in New York City. Any additional archaeological investigations completed subsequent to the Phase 1B investigation (e.g., a Phase 2 archaeological survey or Phase 3 Data Recovery) would be completed prior to construction in consultation with SHPO, LPC, and the Tribal Nations.

Therefore, the Proposed Actions would promote this policy.

*

NEW YORK STATE DEPARTMENT OF STATE
COASTAL MANAGEMENT PROGRAM

Federal Consistency Assessment Form

An applicant, seeking a permit, license, waiver, certification or similar type of approval from a federal agency which is subject to the New York State Coastal Management Program (CMP), shall complete this assessment form for any proposed activity that will occur within and/or directly affect the State's Coastal Area. This form is intended to assist an applicant in certifying that the proposed activity is consistent with New York State's CMP as required by U.S. Department of Commerce regulations (15 CFR 930.57). It should be completed at the time when the federal application is prepared. The Department of State will use the completed form and accompanying information in its review of the applicant's certification of consistency.

A. APPLICANT (please print)

1. Name: Daniel Greene, Governor's Office of Storm Recovery

2. Address: 25 Beaver Street, New York, NY 10004

3. Telephone: Area Code (212) 480-4644

B. PROPOSED ACTIVITY

1. Brief description of activity:

The Proposed Actions comprise implementation of resiliency initiatives intended to work in tandem to enhance coastal and social resiliency along the Tottenville shoreline of the South Shore of State Island, NY. These initiatives include the Living Breakwaters Project (Breakwaters Project) and Tottenville Shoreline Protection Project (Shoreline Project). For the purposes of this assessment, the Proposed Actions represent the implementation of the Layered Strategy, which includes both the Breakwaters Project and the Shoreline Project. The Breakwaters Project would consist of ecologically enhanced breakwater segments occupying approximately 12.7 acres of sand/gravel habitat of Raritan Bay located between 500 and 2,100 feet offshore in waters approximately 2 to 10 feet deep at mean low water. The majority of the breakwater structures would be located more than 1,500 feet from the Federal Navigation Channel, with one breakwater segment located more than 700 feet from the channel. The Breakwaters Project would reduce wave energy at the shoreline; reduce/reverse shoreline erosion; increase habitat diversity through provision of complex subtidal, intertidal, and emergent rocky structure elements; and improve waterfront access and engage with the community through educational and stewardship programs directly related to the coastal resiliency actions. The Shoreline Project would provide on-shore stabilization measures that would augment the wave attenuation and risk reduction potential provided by the Breakwaters Project. It would include a series of shoreline risk-reduction measures along the Tottenville shoreline almost entirely within New York City Department of Parks and Recreation (NYC Parks) Conference House Park from approximately west of the intersection of Swinnerton Street and Billop Avenue to Page Avenue, including: an earthen berm, eco-revetment, hybrid dune system, and raised edge (revetment with trail), along with wetland enhancement and landscaping with coastal vegetation. Three Americans with Disabilities Act (ADA) compliant access points to the beach would be constructed along the shoreline protection system. Portions of the Breakwaters Project and Shoreline Project would be located within the 100-year floodplain and New York State Coastal Erosion Hazard Area.

2. Purpose of activity

The purpose of the Layered Strategy is to reduce wave energy and coastal erosion along the shoreline in Tottenville while enhancing ecosystems and shoreline access and use. The specific goals and objectives of the Proposed Actions are: (1) Risk Reduction, via attenuation of wave energy, minimization of both event-based and long-term shoreline erosion, preservation of beach width, and addressing the impacts of coastal flooding; (2) Ecological Enhancement, by increasing the diversity of aquatic habitats consistent with Hudson-Raritan Estuary Plan priorities (e.g., fish and shellfish habitat); and (3) Social Resiliency, by fostering community education on coastal resiliency directly tied to and building off the structural components of this initiative, increasing physical and visual access to the water’s edge, enhancing community stewardship of on-shore and in-water ecosystems, and increasing access to recreational opportunities.

3. Location of activity

<u>Richmond</u> County	<u>Tottenville</u> City, Town, or Village	<u>South Shore</u> Street or Site Description
---------------------------	--	--

4. Type of federal permit/license required: Section 404 CWA, Section 10 Rivers and Harbors

5. Federal application number, if known: _____

6. If a state permit/license was issued or is required for the proposed activity, identify the state agency and provide the application number, if known:

NYSDEC 401 Water Quality Certification, Articles 15, 25, and 34, OGS

C. COASTAL ASSESSMENT Check either “YES” or “NO” for each of these questions. The numbers following each question refer to the policies described in the CMP document (see footnote on page 2) which may be affected by the proposed activity.

1. Will the proposed activity result in any of the following:

YES/NO

- a. Large physical change to a site within the coastal area which will require the preparation of an environmental impact statement? (11, 22, 25, 32, 37, 38, 41, 43)
- b. Physical alteration of more than two acres of land along the shoreline, land under water or coastal waters? (2, 11, 12, 20, 28, 35, 44)
- c. Revitalization/redevelopment of a deteriorated or underutilized waterfront site? (1)
- d. Reduction of existing or potential public access to or along coastal waters? (19, 20)
- e. Adverse effect upon the commercial or recreational use of coastal fish resources? (9, 10)
- f. Siting of a facility essential to the exploration, development, and production of energy resources in coastal waters or on the Outer Continental Shelf? (29)
- g. Siting of a facility essential to the generation or transmission of energy? (27)
- h. Mining, excavation, or dredging activities, or the placement of dredged or fill material in coastal waters? (15, 35)
- i. Discharge of toxics, hazardous substances or other pollutants into coastal waters? (8, 15, 35)
- j. Draining of stormwater runoff or sewer overflows into coastal waters? (33)
- k. Transport, storage, treatment, or disposal of solid wastes or hazardous materials? (36, 39)
- l. Adverse effect upon land or water uses within the State’s small harbors? (4)

X	
X	
	X
	X
	X
	X
	X
X	
	X
	X
	X
	X

2. Will the proposed activity affect, or be located in, on, or adjacent to any of the following:

YES/NO

- a. State designated freshwater or tidal wetland? (44)
- b. Federally designated flood and/or state designated erosion hazard area? (11, 12, 17)
- c. State designated significant fish and/or wildlife habitat? (7)
- d. State designated significant scenic resource or area? (24)
- e. State designated important agricultural lands? (26)
- f. Beach, dune or Barrier Island? (12)
- g. Major ports of Albany, Buffalo, Ogdensburg, Oswego or New York? (3)
- h. State, county, or local park? (19, 20)
- i. Historic resource listed on the National or State Register of Historic Places? (23)

X	
X	
	X
	X
	X
X	
	X
X	
X	

3. Will the proposed activity require any of the following:

YES/NO

- a. Waterfront site? (2, 21, 22)
- b. Provision of new public services or infrastructure in undeveloped or sparsely populated sections of the coastal area? (5)
- c. Construction or reconstruction of a flood or erosion control structure? (13, 14, 16)
- d. State water quality permit or certification? (30, 38, 40)
- e. State air quality permit or certification? (41, 43)

X	
	X
X	
X	
	X

4. Will the proposed activity occur within and/or affect an area covered by a State approved local waterfront revitalization program? (see policies in local program document*)

X	
---	--

D. ADDITIONAL STEPS

1. If all of the questions in Section C are answered “NO”, then the applicant or agency shall complete Section E and submit the documentation required by Section F.
2. If any of the questions in Section C are answered “YES”, then the applicant or agent is advised to consult the CMP, or where appropriate, the local waterfront revitalization program document.* The proposed activity must be analyzed in more detail with respect to the applicable state or local coastal policies. On a separate page(s), the applicant or agent shall: (a) identify, by their policy numbers, which coastal policies are affected by the activity, (b) briefly assess the effects of the activity upon the policy, and (c) state how the activity is consistent with each policy. Following the completion of this written assessment, the applicant or agency shall complete Section E and submit the documentation required by Section F.

E. CERTIFICATION

The applicant or agent must certify that the proposed activity is consistent with the State’s CMP or the approved local waterfront revitalization program, as appropriate. If this certification cannot be made, the proposed activity shall not be undertaken. If this certification can be made, complete this Section.

“The proposed activity complies with New York State’s approved Coastal Management Program, or with the applicable approved local waterfront revitalization program, and will be conducted in a manner consistent with such program.”

Applicant/Agent’s Name: Daniel Greene, Governor’s Office of Storm Recovery

Address: 25 Beaver Street, New York, NY 10004

Telephone: Area Code (212) 480-4644

Applicant/Agent Signature:  Date: March 15, 2017

F. SUBMISSION REQUIREMENTS

1. The applicant or agent shall submit the following documents to the **New York State Department of State, Office of Planning and Development, Attn: Consistency Review Unit, One Commerce Plaza-Suite 1010, 99 Washington Avenue – Suite 1010, Albany, New York 12231.**
 - a. Copy of original signed form.
 - b. Copy of the completed federal agency application.
 - c. Other available information which would support the certification of consistency.
2. The applicant or agent shall also submit a copy of this completed form along with his/her application to the federal agency.
3. If there are any questions regarding the submission of this form, contact the Department of State at (518) 474-6000.

* These state and local documents are available for inspection at the offices of many federal agencies, Department of Environmental Conservation and Department of State regional offices, and the appropriate regional and county planning agencies. Local program documents are also available for inspection at the offices of the appropriate local government.

Additional Information

As determined by the Federal Consistency Assessment Form, the Proposed Actions require detailed assessment for several New York State Coastal Management Program policies, including policies 2, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 22, 23, 25, 28, 30, 32, 35, 37, 38, 40, 41, 43, and 44. The consistency assessment is provided below for all questions that were answered “yes” in the CAF.

Policy 2: Facilitate the siting of water-dependent uses and facilities on or adjacent to coastal waters.

The Proposed Actions are intended to enhance coastal and social resiliency along the Tottenville shoreline of the South Shore of Staten Island, NY. For the purposes of this assessment, the Proposed Actions represent the implementation of the Layered Strategy, which includes both the Breakwaters Project and the Shoreline Project. The Breakwaters Project and the Shoreline Project must be sited in and adjacent to coastal waters of Raritan Bay in order to serve their purposes of wave attenuation, minimization of event-based and long-term shoreline erosion, preservation of beach width, and providing some level of risk reduction from coastal flooding. The Layered Strategy has also been designed to provide ecological enhancement and increased habitat diversity for aquatic resources, and to foster community stewardship and education on coastal resiliency. The Water Hub component of the Breakwaters Project includes water dependent uses that would provide access for research vessels through the installation of a seasonally deployed boat launch, and both components of the Layered Strategy would encourage recreational use and access to the waterfront. There are currently two potential locations under consideration for the Water Hub facility, each of which would provide visual and physical access for the public to the waterfront. Potential Location 1 would involve construction of a new structure near the southern terminus of Page Avenue, and Potential Location 2 would involve rehabilitation and adaptive reuse of an existing NYC Parks building in the northwestern portion of Conference House Park. Water access and potential storage for kayaks would be available no matter which option is selected.

Therefore, the Proposed Actions would be consistent with this policy.

Policy 11: Buildings and other structures will be sited in the coastal area so as to minimize damage to property and the endangering of human lives caused by flooding and erosion.

Actions associated with the Shoreline Project are fully within the 100-year floodplain in Zones AE and VE. Zones AE and VE are considered Special Flood Hazard Areas (SFHA). Most of the south shore of Staten Island is designated as a Coastal Erosion Hazard Area (CEHA). The Layered Strategy would create a structural system of breakwaters and shoreline resilience measures that would attenuate wave energy, minimize shoreline erosion, and provide risk reduction from coastal flooding along the south shore of Staten Island. Considering up to 30 inches of sea level rise, the Breakwaters Project was designed to reduce wave heights to less than 3 feet in a 100-year storm event, thereby reducing wave energy at the shoreline and structural damage to onshore assets previously exposed to storm wave action. The location and crest elevations of each breakwater segment were selected based on the relative need for storm wave attenuation to protect upland areas with vulnerable buildings and infrastructure. Type A breakwaters would be submerged with 30 inches of projected sea level rise, while Type B and C breakwaters would remain emergent structures with this same sea level rise. All breakwater types are designed to provide wave attenuation and risk reduction from coastal flooding for the south shore of Staten Island with 30 inches of sea level rise. A proposed 3.8-acre area of shoreline restoration between Loretto Street and Manhattan Street would add sediment to the overall system and augment the accretion potential provided by the breakwaters in the narrowest sections of the beach. The earthen berm, raised edge with revetment, and associated landscaping and ecological enhancements of the Shoreline Project would provide some level of risk reduction from coastal flooding and erosion protection in areas landward of these features; the hybrid dune and eco-revetment would provide additional wave attenuation. Green infrastructure measures, permeable surfaces, and native coastal vegetation would increase infiltration in the study area and help to minimize any potential adverse effects due to runoff within the project area. The Layered Strategy would incorporate the latest 90th percentile prediction of sea level rise for the 2050s in the city’s Coastal Zone by considering the New York City Panel on Climate Change’s (“NPCC’s”) 2015 report, and the Water Hub would be designed to comply with Executive Orders 13690 and 11988 in the siting and design of the facility.

Therefore, the Proposed Actions would be consistent with this policy.

Policy 12: Activities or development in the coastal area will be undertaken so as to minimize damage to natural resources and property from flooding and erosion by protecting natural protective features including beaches, dunes, barrier islands and bluffs.

Consistent with New York City's Coastal Protection Initiatives and planning studies for the Tottenville area, the primary goal of the Layered Strategy is to reduce wave energy and coastal erosion along the shoreline in Tottenville, while enhancing ecosystems and shoreline access, use, and stewardship. In particular, the Proposed Actions would result in increased resilience of marine beach, dune, and forest habitats within public open spaces. The Breakwaters Project is intended to attenuate wave energy and reduce shoreline erosion, and thus protect existing beach resources, while minimizing down-drift impacts; the breakwaters would attenuate waves and alter sediment transport along the shore for this purpose. The layout of the breakwater segments was designed to reduce/reverse erosion along particularly vulnerable sections of shoreline. The 3.8 acres of one-time shoreline restoration would be stabilized by the breakwaters. It would augment the accretion potential that can be provided by the breakwaters and add sediment to the overall Raritan Bay system, particularly contributing to the most erosion-prone area in the southwestern portion of the study area and generally enhancing overall potential for beach growth. The Shoreline Project would incorporate the establishment of a vegetated hybrid dune and eco-revetment to provide additional risk reduction from the effects of wave energy, coastal flooding, and erosion. All upland staging and construction activities would be completed in accordance with erosion and sediment control measures under a Stormwater Pollution Prevention Plan (SWPPP) prepared as required under the New York State Pollutant Discharge Elimination System (SPDES) General Permit GP-0-15-002 for Stormwater Discharges from Construction Activity (General Permit), and would minimize potential impacts to beaches from sediment discharge and erosion during construction. The Shoreline Project would replace a temporary dune comprising sand-filled barrier bags that was installed by NYC Parks following Superstorm Sandy. There are no barrier islands or bluffs in the vicinity of the Proposed Actions.

Therefore, the Proposed Actions would be consistent with this policy.

Policy 13: The construction or reconstruction of erosion protection structures shall be undertaken only if they have a reasonable probability of controlling erosion for at least thirty years as demonstrated in design and construction standards and/or assured maintenance or replacement programs.

The breakwater segments and shoreline risk reduction measures have been designed with a target functional design life of 50 years including consideration for 30 inches of sea level rise, after which they would require additional work to upgrade or adapt the structures to increase their lifespan. These features would be monitored and maintained in accordance with an operations and maintenance (O&M) plan developed in consultation with city, state, and federal agencies.

Therefore, the Proposed Actions would be consistent with this policy.

Policy 14: Activities and development, including the construction or reconstruction or erosion protection structures, shall be undertaken so that there will be no measurable increase in erosion or flooding at the site of such activities or development, or at other locations.

The Proposed Actions would be designed to address wave energy, event-based (i.e., short-term/storm-related) and gradual (long-term) shoreline erosion and impacts of coastal flooding, while not leading to increased erosion of the shoreline outside the project site. Wave attenuation provided by the breakwaters would help maintain beach conditions along the Tottenville shoreline by reducing long-term beach erosion rates, reducing exposure of shoreline structures to erosion from wave action, and encouraging accretion in priority beach zones where the beach is most narrow and/or projected rates of erosion are high. The breakwaters would maintain and restore the beach while minimizing down-drift impacts. The breakwaters would attenuate waves and alter the sediment transport along the shore for this purpose. Local sediment transport rates and accretion would be altered but the natural processes would not be blocked, as there would still be sediment transport along the shore and tidal circulation around the breakwaters. The Shoreline Project would provide additional risk reduction from the effects of wave action, and erosion, and would address the impacts of coastal flooding. The construction of its elements would be completed in accordance with the SWPPP and General Permit to minimize potential impacts from sediment discharge and erosion during construction. Inclusion of green infrastructure, permeable surface, and native coastal vegetation throughout the elements of the Shoreline Project would increase infiltration in the study area and help to minimize the effects of erosion from surface runoff and coastal flooding. The Proposed Actions would not lead to increased flooding in adjacent areas.

Therefore, the Proposed Actions would be consistent with this policy.

Policy 15: Mining, excavation or dredging in coastal waters shall not significantly interfere with the natural coastal processes which supply beach materials to land adjacent to such waters and shall be undertaken in a manner which will not cause an increase in erosion of such land.

The Proposed Actions would not result in mining, excavation, or dredging in coastal waters. Therefore, this policy is not applicable.

Policy 16: Public funds shall only be used for erosion protective structures where necessary to protect human life, and new development which requires a location within or adjacent to an erosion hazard area to be able to function, or existing development; and only where the public benefits outweigh the long term monetary and other costs including the potential for increasing erosion and adverse effects on natural protective features.

The terrestrial portion of the study area is located within the 100-year floodplain in Zones AE and VE. Zones AE and VE are considered SFHA. Most of the south shore of Staten Island is designated as a CEHA. Consistent with the City's Coastal Protection Initiatives and planning studies for the Tottenville area, the goal of the Layered Strategy is to reduce wave action and coastal erosion along the shoreline in Tottenville, while enhancing ecosystems and shoreline access and use. The Layered Strategy would create a structural system of living breakwaters and shoreline resilience measures that would attenuate wave energy, minimize shoreline erosion, and provide some level of risk reduction from coastal flooding along the shoreline, especially in the sections of beach where buildings and infrastructure are most vulnerable. As described under Policy 11, the design and location of the breakwater segments were meant to protect these locations and properties which are most susceptible to coastal flooding. The earthen berm, hybrid dune, eco-revetment, raised edge, and associated landscaping and ecological enhancements of the Shoreline Project, including green infrastructure measures where possible, would increase the resilience of the shoreline and augment the wave attenuation and risk reduction potential provided by the Breakwaters Project. The Layered Strategy would result in benefits to the public by addressing wave action, short-term and long-term erosion and coastal flooding impacts along the south shore of Staten Island.

Therefore, the Proposed Actions would be consistent with this policy.

Policy 17: Non-structural measures to minimize damage to natural resources and property from flooding and erosion shall be used whenever possible.

See the response to Policy 16. The Proposed Actions would be consistent with this policy.

Policy 19: Protect, maintain, and increase the level and types of access to public water-related recreation resources and facilities.

The Proposed Actions would provide public access along the shoreline that is compatible with the preservation of natural resources; education regarding such preservation would be incorporated into the use of the Water Hub at either potential location. New public amenities, including a trail through each element of the Shoreline Project, would be introduced into the park that would complement existing public use of the proposed site. The Shoreline Project would provide ADA accessible access points and overlook areas along the trail to enhance physical, visual, and recreational access to the waterfront for the public. The community Water Hub would provide waterfront access and direct seasonal access to the water for research vessels via a seasonal floating boat launch at either potential location. A seasonal floating dock would be established near the breakwater segments to provide water-based access to the breakwaters for observation, monitoring, maintenance, and stewardship, specifically including vessels operated by the BOP and NYHS. The location of the breakwater segments would be marked in accordance with US Coast Guard requirements, and the segments would be spaced far enough apart to avoid interference with recreational boating in Raritan Bay.

Therefore, the Proposed Actions would be consistent with this policy.

Policy 20: Access to the publicly-owned foreshore and to lands immediately adjacent to the foreshore or the water's edge that are publicly-owned shall be provided and it shall be provided in a manner compatible with adjoining uses.

See the response to Policy 19. The Proposed Actions would be consistent with this policy.

Policy 21: Water-dependent and water-enhanced recreation will be encouraged and facilitated, and will be given priority over non-water-related uses along the coast.

See the response to Policy 19. The Proposed Actions would be consistent with this policy.

Policy 22: Development, when located adjacent to the shore, will provide for water-related recreation, whenever such use is compatible with reasonably anticipated demand for such activities, and is compatible with the primary purpose of the development.

See the response to Policy 19. The Proposed Actions would be consistent with this policy.

Policy 23: Protect, enhance and restore structures, districts, areas or sites that are of significance in the history, architecture, archaeology or culture of the state, its communities, or the nation.

The Proposed Actions would affect an area at the southeastern end of Staten Island, and may involve work in or in the immediate vicinity known and potential historic architectural resources, including resources within Conference House Park, which has played an important role in prehistory (see Policy 10.2) and in colonial/early-American history. In compliance with Section 106 of the National Historic Preservation Act, the Proposed Actions would include measures to avoid, minimize, or mitigate adverse effects on historic and cultural resources—including both architectural and archaeological resources—developed in consultation with New York State Historic Preservation Office (SHPO), LPC, and Tribal Nations representing Richmond County. Compliance under Section 106 fulfills the requirements of Section 14.09 of the New York State Historic Preservation Act.

ARCHITECTURAL RESOURCES

Conference House Park contains known and potential historic architectural resources—the Conference House/Christopher Billopp House (National Historic Landmark [“NHL”], listed on the State and National Registers of Historic Places [“S/NR”], and a designated New York City Landmark [“NYCL”]), the Henry Hogg Biddle House (NYCL and appears S/NR-eligible, per New York City Landmarks Preservation Commission (LPC) comment letter dated November 9, 2016), the Sam and Hannah Woods House (appears S/NR-eligible, per LPC comment letter dated November 9, 2016), and the Rutan-Beckett House, which was identified as a potential architectural resource in a 2011 survey of Tottenville. Located just outside Conference House Park is the James M. Rutan House (S/NR-eligible), which is located across Satterlee Street from the park. The Prince’s Bay Lighthouse, near the northern limits of the project area, is S/NR-eligible and is a NYCL.

Two architectural resources, the Henry Hogg Biddle House and the Rutan-Beckett House, are being considered for Water Hub Potential Location 2. If Water Hub Location 2 is selected, one of these two historic architectural resources would be rehabilitated and adaptively used. If plans move forward to locate the programming for the Water Hub within one of these two buildings, consultation with the consulting parties would continue to be undertaken pursuant to the terms outlined in the Programmatic Agreement executed in May 2013 among the Federal Emergency Management Agency (FEMA), SHPO, the New York State Office of Emergency Management, the Delaware Nation, the Delaware Tribe of Indians, the Shinnecock Nation, the Stockbridge-Munsee Community Band of Mohicans, LPC, and ACHP and specifically pursuant to Appendix D to the Programmatic Agreement, which pertains to the CDBG-DR program for activities in New York City.

In addition, because the Henry Hogg Biddle House is a New York City Landmark (NYCL), if the Biddle House is selected for the Water Hub, NYC Parks would consult with the New York City LPC under the New York City Landmarks Preservation Law regarding any proposed alterations to this NYCL. LPC would review the proposed alterations and, upon approval of the proposed alterations, would issue a Binding Commission Report summarizing LPC’s findings. In addition, should the Rutan-Beckett House be determined S/NR-eligible, consultation regarding proposed alterations to this building would also be undertaken with SHPO. Should Potential Location 2 be selected for the Water Hub, consultation with SHPO would be undertaken regarding any proposed alterations to the historic resource. As the anticipated alterations to either building would be limited to rehabilitation and adaptive reuse changes, no adverse effects are anticipated.

ARCHAEOLOGICAL RESOURCES

Conference House Park contains the Ward's Point Archaeological Conservation Area, an archaeological historic district that is a NHL and is listed on the S/NR. Pursuant to Section 106 of the NHPA, a Draft Phase 1A Archaeological Documentary Study ("Draft Phase 1A Study") for the Breakwaters and Shoreline areas of potential effect (APEs) was prepared in August 2016.¹ The study documented the development history of the APEs as well as their potential to yield archaeological resources, including both precontact and historic archaeological resources. In addition, the Phase 1A study documented the current conditions of the Breakwaters and Shoreline APEs and summarized previous cultural resource investigations which have been undertaken in the vicinity.

The Draft Phase 1A study concluded that within the Shoreline APE it is not likely that intact archaeological deposits would be located within the sandy beaches of the Shoreline APE. However, limited portions of the upland areas were determined to possess moderate sensitivity for precontact archaeological resources and moderate sensitivity for historic period archaeological resources. A Phase 1B archaeological investigation was recommended for those areas of archaeological sensitivity within the Shoreline APE that would be impacted by the proposed project. The Breakwaters APE, which is located entirely within the Raritan Bay, was determined to have no sensitivity for archaeological resources dating to the historic period and low to moderate sensitivity for precontact archaeological resources at depths between 25 and 35 feet below the bay floor. As such, the proposed project would not result in impacts to archaeologically sensitive depths and no additional archaeological analysis was recommended for the Breakwaters APE.

Following the submission of the Draft Phase 1A to the consulting parties, the proposed project design was revised to include an additional potential location for the Water Hub (Potential Location 2) as well as alternate locations for water access points along the shoreline within Conference House Park. The Draft Phase 1A will therefore be revised to reflect SHPO's comments and to reflect the changes to the project site's design following the completion of the first draft—including the addition of the new portion of the Shoreline APE located within Conference House Park—and a final version of the Phase 1A will be submitted to SHPO, LPC, and the Tribal Nations for review and comment. In the event that archaeological sensitivity is identified in the newly added portions of the Shoreline APE, a Phase 1B archaeological investigation would be recommended as described above.

All Phase 1B testing within the previously identified areas of archaeological sensitivity or any new areas of archaeological sensitivity that may be identified in the newly added portion of the Shoreline APE would be completed in consultation with SHPO, LPC, and the Tribal Nations. Any additional archaeological investigation or consultation with the consulting parties would be completed pursuant to the terms outlined in the Programmatic Agreement executed in May 2013 among the Federal Emergency Management Agency (FEMA), SHPO, the New York State Office of Emergency Management, the Delaware Nation, the Delaware Tribe of Indians, the Shinnecock Nation, the Stockbridge-Munsee Community Band of Mohicans, LPC, and ACHP and specifically pursuant to Appendix D to the Programmatic Agreement, which pertains to the CDBG-DR program for activities in New York City. Any additional archaeological investigations completed subsequent to the Phase 1B investigation (e.g., a Phase 2 archaeological survey or Phase 3 Data Recovery) would be completed prior to construction in consultation with SHPO, LPC, and the Tribal Nations.

Therefore, the Proposed Actions would be consistent with this policy.

Policy 25: Protect, restore or enhance natural and man-made resources which are not identified as being of statewide significance, but which contribute to the overall scenic quality of the coastal area.

An urban design and visual resources analysis was prepared in accordance with *City Environmental Quality Review (CEQR) Technical Manual* methodologies and in compliance with NYSDEC *Assessing and Mitigating Visual Impacts* policy memorandum (DEP-00-2 issued 7/31/00) on assessing and mitigating effects of visual and aesthetic resources. The analysis provides a description of existing urban design characteristics, visual resources, and viewshed conditions within the project area. Aesthetic and visual resources were identified, including Conference House Park and historic structures within the park, and

¹ AKRF, Inc. (2016): "Phase 1A Archaeological Documentary Study: Coastal and Social Resiliency Initiatives for the Tottenville Shoreline: Living Breakwaters and Tottenville Shoreline Protection Projects; Staten Island, Richmond County, New York." Prepared for: the Governor's Office of Storm Recovery; New York, NY.

views toward the waterfront and Raritan Bay. Views from the areas of the Proposed Actions would continue to include wide open views of Raritan Bay. The Proposed Actions would complement the scenic character of natural resources along the shoreline, increase physical and visual access to the water's edge, and increase community stewardship of on-shore and in-water ecosystems. The earthen berm would be located in a densely wooded area and would not adversely affect scenic quality in the area. The hybrid dune system would be slightly taller than the existing temporary dune that it would replace, but this would result in minimal changes to views and scenic quality of the coastal area. The Water Hub or small storage facility located at Potential Location 1 would be designed to be contextual to the surrounding area and buildings in terms of scale, siting, and materials. The Water Hub at Potential Location 2 would be within an existing building and would not result in any change to scenic resources. The visual quality of the shoreline would be enhanced through the establishment of native coastal vegetation throughout the project elements.

Therefore, the Proposed Actions would be consistent with this policy.

Policy 28: Ice management practices shall not interfere with the production of hydroelectric power, damage significant fish and wildlife and their habitats, or increase shoreline erosion or flooding.

No ice management activities would be conducted as part of the Proposed Actions. Therefore, this policy is not applicable.

Policy 30: Municipal, industrial, and commercial discharge of pollutants, including but not limited to, toxic and hazardous substances, into coastal waters will conform to state and national water quality standards.

The Proposed Actions would not result in municipal, industrial, or commercial discharge of pollutants into coastal waters. Stormwater discharges during construction would be in accordance with a SWPPP developed as required by the General Permit.

Therefore, the Proposed Actions would be consistent with this policy.

Policy 32: Encourage the use of alternative or innovative sanitary waste systems in small communities where the costs of conventional facilities are unreasonably high, given the size of the existing tax base of these communities.

Currently, based on information from NYCDEP, there is no sanitary sewage infrastructure in the area of the proposed Water Hub at Potential Location 1, although such conveyance is planned as per New York City Department of Environmental Protection (NYCDEP) Drainage Plans. Should a sanitary sewer not be available to receive sanitary waste from the proposed Water Hub at Potential Location 1, similar to other areas within the study area, sanitary waste would be discharged to a septic system designed in accordance with NYSDEC and New York State Department of Health (NYSDOH) requirements and standards. The Water Hub at Potential Location 2 would be within an existing NYC Parks structure that discharges to a septic system.

Therefore, the Proposed Actions would be consistent with this policy.

Policy 35: Dredging and filling in coastal waters and disposal of dredged material will be undertaken in a manner that meets existing State permit requirements, and protects significant fish and wildlife habitats, scenic resources, natural protective features, important agricultural lands, and wetlands.

No dredging would occur as a result of the Proposed Actions. The Breakwaters Project would result in the replacement of approximately 12.7 acres of sand/gravel habitat with approximately 41.2 acres of diverse rocky habitat. The breakwaters would be constructed in a manner that minimizes the potential for resuspension of bottom sediment in accordance with state and federal permits, including timing restrictions for in-water activities. Geotextile panels, which would underlay the breakwater structures, would be floated to their final location and lowered to the bottom under the weight of large rocks to minimize sediment resuspension. Stone and bio-enhancing armor units would be placed on top of the geotextile; these materials would be "clean" to further minimize the potential for release of suspended sediment. Construction vessels would maintain at least 2 feet of clearance from the bottom, or work only at tide levels sufficient to keep the barges off the Bay bottom, to minimize sediment resuspension caused by their movement. Sediment disturbing activities would not impact the listed resources. Placement of 15,369 cubic yards of sand within a 3.8-acre area that would result in a net loss of 2.0 acres below MHW is intended to reduce erosion and augment the accretion potential provided by the breakwaters in targeted sections of the

shoreline. This shoreline restoration would be completed outside the spawning period for horseshoe crab and would not adversely affect the listed resources.

Therefore, the Proposed Actions would be consistent with this policy.

Policy 37: Best management practices will be utilized to minimize the non-point discharge of excess nutrients, organics and eroded soils into coastal waters.

The landscaped areas within the Shoreline Project and at the Water Hub at either potential location would be maintained using Integrated Pest Management (IPM) techniques, thereby substantially diminishing the need for the use of pesticides and other chemicals and minimizing adverse effects to coastal waters. The implementation of erosion and sediment controls during construction in accordance with the New York State Erosion and Sediment Control Standards, and integration of stormwater management measures post-construction in accordance with the SWPPP and General Permit would minimize the discharge of soil into Raritan Bay as a result of the proposed shoreline improvement activities. With these measures in place, stormwater discharges from the Water Hub and Shoreline Project would not have the potential to result in significant adverse impacts to coastal waters. No discharge would be associated with the Breakwaters Project.

Therefore, the Proposed Actions would be consistent with this policy.

Policy 38: The quality and quantity of surface water and groundwater supplies will be conserved and protected, particularly where such waters constitute the primary or sole source of water supply.

Neither surface waters nor groundwater are used for potable water supply in the area, and the Proposed Actions would not result in surface or groundwater withdrawal. Drinking water for Staten Island is provided by New York City's system of upstate reservoirs. Therefore, this policy is not applicable to the Proposed Actions.

Policy 40: Effluent discharged from major steam electric generating and industrial facilities into coastal waters will not be unduly injurious to fish and wildlife and shall conform to state water quality standards.

The Proposed Actions would not result in the establishment of electric generating capacity or industrial facilities. Therefore, this policy is not applicable to the Proposed Actions.

Policy 41: Land use or development in the coastal area will not cause national or state air quality standards to be violated.

NEPA requires an assessment of potential impacts on air quality to demonstrate compliance with the Clean Air Act (CAA), including State Implementation Plans (SIPs). The air quality analysis follows guidance from the United States Environmental Protection Agency and the *CEQR Technical Manual*. The analysis considers the potential impacts and benefits of the Proposed Actions on air quality and examine whether the Proposed Actions could result in any new exceedances of or any exacerbation in any existing exceedances of National Ambient Air Quality Standards (NAAQS).

The Proposed Actions would generate emissions from both direct and indirect sources. Direct sources of emissions would primarily be from natural gas and/or oil fired heating, ventilation, and air condition systems (HVAC) associated with the Water Hub at either potential location. Potential indirect air quality impacts of the Proposed Actions would stem from increases in vehicular traffic. Initial screening level analyses were performed to evaluate the potential for adverse air quality impacts from the Water Hub's HVAC system. An AERSCREEN Analysis indicated that the maximum modeled pollutant concentrations (nitrogen dioxide, sulfur dioxide, and fine particulate matter) would be well below background levels and lower than their respective thresholds (i.e., NAAQS and *de minimis* criteria), and there would be no potential for significant air quality impacts from the Water Hub. Similarly, the maximum predicted levels of carbon monoxide and fine particulate matter associated with the projected increase in traffic and parking demand would be in compliance with the applicable criteria, and there would be no potential for significant adverse impacts on air quality from the proposed parking lot.

Therefore, the Proposed Actions would be consistent with this policy.

Policy 43: Land use or development in the coastal area must not cause the generation of significant amounts of acid rain precursors: nitrates and sulfates.

See the response to Policy 41. The Proposed Actions would be consistent with this policy.

Policy 44: Preserve and protect tidal and freshwater wetlands and preserve the benefits derived from these areas.

The goals of the Proposed Actions are in concert with the goal of protecting and restoring tidal and freshwater wetlands. The Layered Strategy would include risk reduction from wave energy, coastal erosion, and coastal flooding, enhance ecosystems along the coast, and foster stewardship and community education. Each action would help to protect the tidal and freshwater wetlands present within the study area. Construction of the breakwaters would result in temporary and permanent impacts to NYSDEC littoral zone tidal wetlands and mapped NWI estuarine wetlands in the vicinity of the breakwater segments due to sediment resuspension during construction of the breakwater segments. Increases in suspended sediment would be temporary, localized, and would dissipate upon cessation of sediment disturbing activities. There would be a net loss of 5.0 acres of NYSDEC littoral zone tidal wetlands located in water depths of 6 feet or less at MLW within the footprint of the Type A and Type B breakwater segments, and about 2.0 acres within the portion of the shoreline restoration below MHW, for a total loss of NYSDEC littoral zone tidal wetlands of approximately 7.0 acres. This loss would be small in the context of unaffected littoral zone tidal wetlands within the study area and Raritan Bay as a whole.

The breakwater alignment, segment length, and distance from the shore were designed to promote beach accretion, but avoid the creation of tombolos, or sand spits connecting the shore and breakwater created through deposition, which would act like a terminal groin extending into the water from the beach and encroaching on littoral zone wetlands. This was tested in shoreline modeling for various breakwater alignments; the layout of the breakwaters would result in containment of greater amounts of sediment and stabilization of the shoreline throughout the system, thereby avoiding the development of tombolos and additional loss of littoral zone tidal wetlands.

The hybrid dune and wetland bridge within the transition between the earthen berm and hybrid dune, and the proposed path would be constructed within the 0.8-acre delineated tidal wetland, resulting in permanent impacts of 7,358 square feet (0.17 acres) from the hybrid dune, 1,608 square feet (0.04 acres) from the path, and 1,245 square feet (0.03 acres) from the transition node structure. Permanent impacts to the tidal wetland would be primarily within the portion of the wetland dominated by common reed and would be offset by the enhancement of the tidal wetland plant community that would result from the proposed modification of the inlet to Raritan Bay to increase tidal exchange within this wetland. The path would be designed in consultation with the NYSDEC and USACE to allow access across the wetland while minimizing adverse effects to the tidal wetland. Temporary impacts would be minimized through the use of marsh mats or low ground-pressure equipment within the wetland and installation of erosion and sediment control measures throughout the construction area in accordance with a SWPPP prepared under the General Permit. Wetland vegetation would be planted to replace vegetation temporarily disturbed during construction. With these measures in place, temporary impacts to wetlands during construction and the permanent loss of a small portion of the wetland due to the placement of the hybrid dune and transition node structure would not result in significant adverse impacts to wetland resources.

Elements of the shoreline component of the Proposed Actions (i.e., the hybrid dune, eco-revetment, raised edge, the parking lot for the Water Hub at Potential Location 1, and shoreline restoration) would be built within the NYSDEC-regulated tidal wetlands adjacent area (TWAA). Within the TWAA outside the shoreline restoration area, erosion and sediment control measures (e.g., silt fencing and hay bales) would be implemented in accordance with a SWPPP prepared for the project as required by the SPDES General Permit and would minimize discharges of sediment during construction and avoid adverse effects to wetlands. The hybrid dune would be permeable, thereby enhancing the function of the TWAA in protecting NYSDEC littoral zone tidal wetlands within Raritan Bay by stabilizing the shoreline and allowing for infiltration of some runoff from adjacent uplands. The raised edge would also use permeable surfaces where feasible and would include stormwater management measures, such as bioswales, to maintain the protective function of the TWAA. While the walkway on the eco-revetment would be concrete, similar stormwater management measures would be installed adjacent to the eco-revetment to allow treatment of runoff. The planted portions of the revetment and landscaping with native coastal species throughout the shoreline components would allow additional infiltration. The parking area for the Water Hub at Potential Location 1 would likewise be designed as a pervious surface and would include perimeter screening, interior landscaping, and stormwater management to manage any net runoff generated by the parking area. The Proposed Actions would minimize the introduction of impervious surfaces within the NYSDEC TWAA, would stabilize the shoreline while minimizing the potential for erosion of the beach, would

enhance the habitats through the establishment of native dune vegetation and other native coastal plant species throughout the Shoreline Project, and would not adversely affect the function of the TWAA to protect NYSDEC littoral zone tidal wetlands.

Therefore, the Proposed Actions would be consistent with this policy.

NEW YORK STATE DEPARTMENT OF STATE
COASTAL MANAGEMENT PROGRAM

Coastal Assessment Form

A. INSTRUCTIONS (Please print or type all answers)

1. State agencies shall complete this CAF for proposed actions which are subject to Part 600 of Title 19 of the NYCRR. This assessment is intended to supplement other information used by a state agency in making a determination of significance pursuant to the State Environmental Quality Review Act (see 6 NYCRR, Part 617). If it is determined that a proposed action will not have a significant effect on the environment, this assessment is intended to assist a state agency in complying with the certification requirements of 19 NYCRR Section 600.4.
2. If any question in Section C on this form is answered "yes," then the proposed action may affect the achievement of the coastal policies contained in Article 42 of the Executive Law. Thus, the action should be analyzed in more detail and, if necessary, modified prior to either (a) making a certification of consistency pursuant to 19 NYCRR Part 600 or, (b) making the findings required under SEQR, 6 NYCRR, Section 617.11, if the action is one for which an environmental impact statement is being prepared. If an action cannot be certified as consistent with the coastal policies, it shall not be undertaken.
3. Before answering the questions in Section C, the preparer of this form should review the coastal policies contained in 19 NYCRR Section 600.5. A proposed action should be evaluated as to its significant beneficial and adverse effects upon the coastal area.

B. DESCRIPTION OF PROPOSED ACTION

1. Type of state agency action (check appropriate response):

- (a) Directly undertaken (e.g. capital construction, planning activity, agency regulation, land transaction)
- (b) Financial assistance (e.g. grant, loan, subsidy)
- (c) Permit, license, certification

2. Describe nature and extent of action:

The Proposed Actions comprise implementation of resiliency initiatives intended to work in tandem to enhance coastal and social resiliency along the Tottenville shoreline of the South Shore of Staten Island, NY. These initiatives include the Living Breakwaters Project (Breakwaters Project) and Tottenville Shoreline Protection Project (Shoreline Project). The Breakwaters Project would consist of ecologically enhanced breakwater segments occupying approximately 12.7 acres of sand/gravel habitat of Raritan Bay located between 500 and 2,100 feet offshore in waters approximately 2 to 10 feet deep at mean low water. Additionally, the vast majority of the breakwater structures would be located more than 1,500 feet from the Federal Navigation Channel with one breakwater segment located more than 700 feet from the channel. The Breakwaters Project would reduce wave energy at the shoreline; reduce/reverse shoreline erosion; increase habitat diversity through provision of complex subtidal, intertidal, and emergent rocky structure elements; and promote social resilience through educational and community programs proposed at a Water Hub. There are two potential locations under consideration for siting the Water Hub: Potential Location 1 would be near the southern terminus of Page Avenue and would involve construction of a new structure. Water Hub Potential Location 2 would involve the rehabilitation and adaptive reuse of an existing NYC Parks structure in the northwestern portion of Conference House Park. The Shoreline Project would provide on-shore stabilization measures that would augment the wave attenuation and risk reduction potential provided by the Breakwaters Project. It includes a series of shoreline risk-reduction measures along the Tottenville shoreline largely within New York City Department of Parks and Recreation (NYC Parks) Conference House Park from approximately west of the intersection of Swinnerton Street and Billop Avenue to Page Avenue, including: an earthen berm, eco-revetment, hybrid dune system, and raised edge (revetment with trail), along with wetland enhancement and landscaping with coastal vegetation. Three Americans with Disabilities Act (ADA) compliant access points and overlooks would be constructed along the shoreline protection system. Portions of the Breakwaters Project and Shoreline Project would be located within the 100-year floodplain and New York State Coastal Erosion Hazard Area.

3. Location of action: Richmond Tottenville South Shore
County City, Town or Village Street or Site Description

4. If an application for the proposed action has been filed with the state agency, the following information shall be provided:

- (a) Name of applicant: Daniel Greene, Governor's Office of Storm Recovery
- (b) Mailing address: 25 Beaver Street, New York, NY 10004
- (c) Telephone Number: Area Code (212) 480-4644
- (d) State agency application number: _____

5. Will the action be directly undertaken, require funding, or approval by a federal agency?
Yes No _____ If yes, which federal agency? US Department of Housing and Urban Development CDBG-DR Program

C. COASTAL ASSESSMENT (Check either "YES" or "NO" for each of the following questions)

	<u>YES</u>	<u>NO</u>
1. Will the proposed activity be <u>located</u> in, or contiguous to, or have a <u>significant effect</u> upon any of the resource areas identified on the coastal area map:		
(a) Significant fish or wildlife habitats?	_____	_____ <u>X</u>
(b) Scenic resources of statewide significance?	_____	_____ <u>X</u>
(c) Important agricultural lands?	_____	_____ <u>X</u>
2. Will the proposed activity have a <u>significant effect</u> upon:		
(a) Commercial or recreational use of fish and wildlife resources?	_____	_____ <u>X</u>
(b) Scenic quality of the coastal environment?	_____	_____ <u>X</u>
(c) Development of future, or existing water dependent uses?	_____	_____ <u>X</u>
(d) Operation of the State's major ports?	_____	_____ <u>X</u>
(e) Land and water uses within the State's small harbors?	_____	_____ <u>X</u>
(f) Existing or potential public recreation opportunities?	_____	_____ <u>X</u>
(g) Structures, sites or districts of historic, archeological or cultural significance to the State or nation?	_____	_____ <u>X</u>
3. Will the proposed activity <u>involve</u> or <u>result in</u> any of the following:		
(a) Physical alteration of two (2) acres or more of land along the shoreline, land under water or coastal waters?	_____ <u>X</u>	_____
(b) Physical alteration of five (5) acres or more of land located elsewhere in the coastal area?	_____	_____ <u>X</u>
(c) Expansion of existing public services of infrastructure in undeveloped or low density areas of the coastal area?	_____	_____ <u>X</u>
(d) Energy facility not subject to Article VII or VIII of the Public Service Law?	_____	_____ <u>X</u>
(e) Mining, excavation, filling or dredging in coastal waters?	_____ <u>X</u>	_____
(f) Reduction of existing or potential public access to or along the shore?	_____	_____ <u>X</u>
(g) Sale or change in use of state-owned lands located on the shoreline or under water?	_____	_____ <u>X</u>
(h) Development within a designated flood or erosion hazard area?	_____ <u>X</u>	_____
(i) Development on a beach, dune, barrier island or other natural feature that provides protection against flooding or erosion?	_____ <u>X</u>	_____
4. Will the proposed action be <u>located</u> in or have a <u>significant effect</u> upon an area included in an approved Local Waterfront Revitalization Program?	_____ <u>X</u>	_____

D. SUBMISSION REQUIREMENTS

If any question in Section C is answered "Yes", AND either of the following two conditions is met:

Section B.1(a) or B.1(b) is checked; or
Section B.1(c) is checked AND B.5 is answered "Yes",

THEN one copy of the Completed Coastal Assessment Form shall be submitted to:

New York State Department of State
Office of Coastal, Local Government and Community Sustainability
One Commerce Plaza
99 Washington Avenue, Suite 1010
Albany, New York 12231-0001

If assistance of further information is needed to complete this form, please call the Department of State at (518) 474-6000.

E. REMARKS OR ADDITIONAL INFORMATION

2. Will the proposed activity have a significant effect upon:

(f) Existing or potential public recreation activities? [Policies 9, 19, 20, 21, 22]

The proposed community Water Hub at Potential Location 1 would include an approximately 210-foot-long by 8-foot wide accessory seasonal boat launch would extend from about 1 foot above MHW to water depths sufficient for docking of a shallow draft research vessel in water depths between 4 and 5 feet at MLW. A temporary seasonal floating dock measuring about 30 feet by 50 feet, with a total area of 1,500 square feet, would be installed near the breakwaters segments for observations, monitoring, maintenance and stewardship, including specifically, for vessels operated by the Billion Oyster Project and any other anticipated project stewards. The seasonal boat launch and floating dock would not impede use of recreational fish and wildlife resources or lead to over-use of these resources. The Proposed Actions would provide enhanced public access to the waterfront and adjacent shoreline areas via a continuous trail with periodic placement of ADA accessible trails, access points and overlooks. The Water Hub (at either potential location) and shoreline improvements would encourage and facilitate water-enhanced recreational activities on the water and in waterfront-adjacent areas. In particular, the seasonal floating dock would provide water-based access to the breakwaters for observation, monitoring, maintenance, and stewardship of the floating oyster nursery and breakwaters. The location of the breakwater segments would be marked in accordance with USCG requirements, and the segments would be spaced far enough apart to avoid interference with recreational boating in Raritan Bay. Therefore, the Proposed Actions are consistent with Policies 9, 19, 20, 21, and 22.

3. Will the proposed activity involve or result in any of the following:

(a) Physical alteration of two (2) acres or more of land along the shoreline, land under water or coastal waters? [Policies 2, 11, 12, 20, 28, 35, 44]

The Breakwaters Project would include placement of 10 ecologically enhanced breakwater segments occupying a footprint of approximately 12.7 acres of sand/gravel habitat located between 500 and 2,100 feet offshore from the Tottenville shoreline in waters approximately 2 to 10 feet deep at mean low water; the breakwaters would comprise 41.2 acres of diverse rocky habitat. Although the Breakwaters Project would result in a net increase in fill in Raritan Bay, the breakwaters would be composed of complex rocky and eco-enhanced materials that would create habitat diversity for fish and shellfish, resulting in a net increase of 28.5 acres of available habitat when compared to the 12.7 acres of displaced sand/gravel habitat. The Breakwaters Project would also include about 20,701 cubic yards of shoreline restoration over 3.8 acres of beach between Manhattan Street and Loretto Street as part of beach restoration activities; 15,369 cubic yards would be placed below mean high water (MHW) and result in a net loss of 2.0 acres below MHW. The Water Hub at Potential Location 1 would comprise an approximately 5,000-square-foot (0.11-acre) building and approximately 35,500 square feet (0.81 acres) of site improvements (e.g., landscaping, parking, and utility spaces for New York City Department of Parks and Recreation [NYC Parks] vehicles and equipment). The Water Hub at Potential Location 2 would be within an existing NYC Parks structure, would use existing parking space, and would only result in physical alteration of land for the installation of an ADA accessible ramp to the water access. A 1,500-square-foot (0.03-acre) floating dock would be deployed for seasonal use near the middle section of breakwaters, and a floating boat launch would be seasonally deployed as part of the Water Hub facility at either potential location for use by research vessels. The Shoreline Project would include a 1,211 linear foot earthen berm comprising 0.76 acres, a 1,160 linear foot hybrid dune system comprising 2.3 acres, a 396-foot eco-revetment comprising 0.6 acres, and a 2,536-foot raised edge (revetment and trail) made of porous material comprising 1.7 acres; in total, the Shoreline Project would cover approximately 5.36 acres. The Proposed Actions would improve resilience of the shoreline, improve habitat diversity for aquatic biota, minimize impacts to and enhance tidal wetlands, provide improved access to the waterfront, and would not require ice management. Therefore, the Proposed Actions are consistent with Policies 2, 11, 12, 20, 28, 35, and 44.

(e) Mining, excavation, filling or dredging in coastal waters? [Policies 15, 35]

No mining, excavation, or dredging would occur as a result of the Proposed Actions. The Breakwaters Project would result in the replacement of 12.7 acres of sand/gravel habitat with 41.2 acres of diverse rocky surface. Construction of the breakwaters would be conducted in a manner that would minimize sediment resuspension and potential temporary effects to water quality, and construction would adhere to state and federal permits, including timing restrictions for in-water activities. Placement of 15,369 cubic yards of sand for shoreline restoration would result in a net loss of 2.0 acres below MHW. The shoreline restoration is intended to reduce erosion and augment the accretion potential of the breakwaters in targeted sections of the shoreline. It would be completed outside of the spawning period for horseshoe crab and would not adversely affect coastal waters. Therefore, the Proposed Actions are consistent with Policies 15 and 35.

(h) Development within a designated flood or erosion hazard area? [Policies 11, 12, 17]

The Proposed Actions would be within existing open space located fully within the 100-year floodplain in Zones AE and VE. Zones VE and AE are considered Special Flood Hazard Areas (SFHA). Most of the south shore of Staten Island falls within state-designated Coastal Erosion Hazard Area. The Shoreline Project and Water Hub would consider CEHA sensitivity, wetlands, and other natural resources in the context of projected sea level rise, erosion, flooding, and climate change impacts, and the Water Hub at either potential location would be designed to comply with Executive Orders 13690 and 11988. The Proposed Actions consist of both structural and non-structural resilience measures that would attenuate wave energy, minimize shoreline erosion, and address impacts of coastal flooding along the south shore of Staten Island. None of the Proposed Actions would exacerbate flooding conditions, rather, all Proposed Actions are being conducted to increase the resilience of the Tottenville shoreline along the South Shore of Staten Island during storm events and in consideration of up to 30 inches sea level rise. The location and crest elevations of each breakwater segment were selected based on the relative need for storm wave attenuation to protect upland areas with vulnerable buildings and infrastructure. The earthen berm, hybrid dune, eco-revetment, raised edge, and associated landscaping and ecological enhancements of the Shoreline Project would increase the resilience of the shoreline and augment the wave attenuation and risk reduction potential provided by the Breakwaters Project. Construction activities would be completed in accordance with a Stormwater Pollution Prevention Plan (SWPPP) prepared for the project as required by New York's State Pollutant Discharge Elimination System (SPDES) General Permit GP-0-15-002 for Stormwater Discharges from Construction Activity (General Permit) in order to minimize erosion and sediment discharge during construction. Therefore, the Proposed Actions are consistent with Policies 11, 12, and 17.

(i) Development on a beach, dune, barrier island or other natural feature that provides protection against flooding or erosion? [Policy 12]

Consistent with New York City's Coastal Protection Initiatives and planning studies for the Tottenville area, the primary goal of the Proposed Actions is to reduce wave action and coastal erosion along the shoreline in Tottenville, while enhancing ecosystems and shoreline access and use. In particular, the Proposed Actions would result in increased resilience to marine beach, dune, and forest habitats within public open spaces. The breakwater system is designed and located to maintain and restore the beach while minimizing down-drift impacts. The breakwaters would attenuate waves and alter the sediment transport along the shore for this purpose. Local sediment transport rates and accretion would be altered but the natural processes would not be blocked as there would still be sediment transport along the shore and tidal circulation around the breakwaters. The 3.8 acres of one-time shoreline restoration would augment the accretion potential that can be provided by the breakwaters and add sediment to the overall Raritan Bay system, particularly contributing to the most erosion-prone area in the southwestern portion of the study area. The Shoreline Project would incorporate the establishment of a vegetated hybrid dune and eco-revetment to provide additional risk reduction from the effects of wave action, coastal flooding and erosion. All upland construction and staging activities would be conducted in accordance with a SWPPP prepared as required by the General Permit, thereby minimizing potential impacts from sediment discharge and erosion during construction. Therefore, the Proposed Actions are consistent with Policy 12.

4. Will the proposed action be located in or have a significant effect upon an area included in an approved Local Waterfront Revitalization Program?

The Proposed Actions are consistent with the New York City Waterfront Revitalization Program.

Preparer's Name: Daniel Greene (Please print)
Title: General Counsel Agency: Governor's Office of Storm Recovery
Telephone Number: (212) 480-4644 Date: May 15, 2017